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ABSTRACT

This publication summarizes presentations and discussions from a conference that addressed specific issues in the National Assessment of Vocational Education and in the 1990 Perkins Act that mandated the assessment. Introductory materials include a summary of consensus issues from the conference (David Boesel), welcoming remarks (Bruno Manno), and an outline of the conference's purpose (Boesel). Summaries of six panels (presentations and discussion) follow. "Panel 1: Legislative Intent" highlights the purposes of the legislation. "Panel 2: Effects of the Perkins Act on Policy and Practice" summarizes five presentations on state administration of vocational education programs, local practices, secondary and postsecondary articulation, and postsecondary policy and practices. "Panel 3: Funding Issues" summarizes four papers on expenditures for program improvement, funds allocation, funding formulas, and the postsecondary level. "Panel 4: Student Outcomes" includes seven presentations on assessing academic outcomes, success of the school-to-work transition, relevance of vocational training to subsequent employment, occupations and earnings, and employer satisfaction. "Panel 5: General and Special Programs" summarizes five presentations on correctional institutions, tribal institutions, flexibility of delivery systems, and access. "Panel 6: Academic and Vocational Issues" summarizes five presentations on teacher preparation, the effect of accountability on service delivery, the extent and success of integration of academic and vocational curricula, and the effect of educational reform on vocational education. (YLB)

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# Summary Proceedings of the Design Conference for the National Assessment of Vocational Education

Washington, D.C.
March 13–15, 1991

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This publication includes a summary of the presentations and discussions proceeding from the National Assessment of Vocational Education Design Conference, held on March 13–15, 1991 in Washington, D.C. The Design Conference, sponsored by OERI, was intended to address specific issues in the assessment and in the 1990 Perkins Act, which mandated the assessment.

The papers that were presented at the conference appear in a companion publication, **Papers Presented at the Design Conference for the National Assessment of Vocational Education**.

Subsequent reports will set forth the findings of the assessment.

The National Assessment of Vocational Education was mandated by the Carl D. Perkins Vocational and Applied Technology Act of 1990. The conduct of the National Assessment of Vocational Education and the preparation of this report were sponsored by the U.S. Department of Education, Office of Educational Research and Improvement as mandated in Section 403(a)(1) of the Act. Any opinions, findings, conclusions, or recommendations expressed in this publication are those of the authors and do not necessarily reflect the opinions of the U.S. Department of Education.

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# Summary Proceedings of the Design Conference for the National Assessment of Vocational Education

**Washington, D.C.**
**March 13–15, 1991**

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## Contents


Summary of Major Research Questions and Issues . . . . . v

Introduction . . . . . 1

Welcoming Remarks . . . . . 1

Purpose of the Conference . . . . . 2

Panel 1: Legislative Intent . . . . . 2

Panel 2: Effects of the Perkins Act on Policy and Practice . . . . . 5

Panel 3: Funding Issues . . . . . 10

Panel 4: Student Outcomes . . . . . 18

Panel 5: General and Special Populations . . . . . 30

Panel 6: Academic and Vocational Issues . . . . . 44

Final Discussion and Comments . . . . . 58

# Summary of Major Research Questions and Issues

**David Boesel, Director**
**National Assessment of Vocational Education**

The Design Conference for the National Assessment of Vocational Education resulted in greater consensus and fewer differences than had been expected. Some of the consensus issues and their conclusions are summarized below.

First, there was consensus on how to approach a study such as this; that is, you must have some model in mind. You must have a concept of the organization of vocational education, of where it fits into the larger social and economic system, and of the directions in which many people feel it should go. The 1990 Perkins legislation reflects many of these elements.

Clearly, the United States is operating in competition with other countries in the world economic market. That is one cause of major changes in the domestic labor market and the economy, including the decline of manufacturing jobs. Also, in many industries, competition is bringing about a broadening of the concept of an occupation, of the tasks related to a particular occupation, and of the skills required to carry out those tasks.

In a related way, and perhaps consequently, we are moving toward a broader concept of vocational education, both in terms of the specific kinds of courses taught and the relationship between vocational and academic education. This relationship includes the effort to upgrade vocational education and emphasis on tech-prep "2+2" and "4+2" programs. The broader concept of vocational education is also reflected in the legislation's emphasis on "all aspects of the industry." These innovations engender what has been called "technological literacy."

While we are seeing greater emphasis on broadening, upgrading, and integrating vocational education, we do not want to lose sight of the specific vocational skills that must be learned in this educational process.

Second, there was consensus on what is emphasized in the new Perkins legislation—both generally and with respect to the assessment; that is, on program improvement and service to special populations. Program improvement is to be achieved through such initiatives as integration of academic and vocational education and tech-prep, among others. Improved access for special populations to programs of high quality is related to new funding mechanisms.

Previous Perkins legislation included set-asides for special populations and these have been eliminated. Understandably, the consequences of their elimination has caused concern in both the Congress and the general public. The consequences of concentrating funds for students with handicaps and learning disabilities in specific areas, based on levels of poverty, also creates concern. This is an important area for the assessment to examine. As suggested at the conference, input from special populations should be included in the assessment.

Educational reform efforts may also affect special populations. Higher performance standards may raise equity questions for those students who will find it difficult to meet the new standards.

Past assessments have not included the education of persons in tribal institutions and correctional facilities, but the new assessment will look at these populations. They cannot receive heavy emphasis and will probably be addressed through limited surveys and case studies.

Third, there was consensus about the amount and kinds of work that will be included in the assessement, based on schedules and time limitations established in the legislation. It appears that we will be able to look at and say some valid (though not definitive) things about the distribution of funds. Available information will allow us to tell what happens to Perkins dollars in schools and programs, though not in great detail.

In the time available, we will be able to do process and formative studies and evaluation. We can look at some of the immediate state and local responses to the Perkins legislation in terms of the following: 1) Are standards being established? 2) Is there participation in local planning? 3) Are committees being set up? 4) What progress is being made in planning? There are other questions as well. However, we probably will be able to make only a start at addressing one of the central questions: What is the effect of the Perkins legislation on program improvement? There will not be time to reach definitive conclusions about this issue.

It will be equally difficult to talk about access of special populations to the improved programs. We will be able to say something about the current state of their access to good programs, and we can probably define "good programs." But we will be unable to say anything conclusive about whether the Perkins Act is improving programs and whether, among all the other factors at work, it is having an effect on access for special populations.

We must be open with Congress about the time limitations and let them know at the outset what is possible to do within the time frame and what will have to be done over the longer term. One thing that can and should be done is to describe the current state of vocational education. This can be done irrespective of the Perkins legislation time frame, the 5-year authorization cycle, and the need to say something about the impact of the legislation. We can describe vocational education and look at changes that have occurred over the past 5 to 10 years. We will want to compare the current state of vocational education to what existed previously.

We will want to examine short-term Perkins outcomes, insofar as possible. In addition, we should embark on some longer-term studies that will make it possible to answer some of these questions in greater depth. This may be a subject of some debate. However, with such longer-term studies, we will come closer to definitive answers than we will be able to in the 3 years now available.

We have agreed that, in conducting the National Assessment, we need to go beyond looking at plans and records and our own survey results—although they can be valuable. It is important that we go into school districts and schools and do case studies. We also should use the community as the unit of analysis so that we can get some sense of the interaction among employers, students, parents, and teachers.

This sort of evaluation means spending more money in a few sites and less in many sites, and this is the cause of a fundamental tension in the assessment. We would like to have broad, general representation and, at the same time, we would like to have depth. The discussions at this conference have pointed toward the direction of depth, of taking a closer look at what happens in schools; how students, parents, and employers feel; and getting a better sense of what is actually happening in the communities where the education is taking place.

In conducting the National Assessment, we want to maintain a balance between secondary and postsecondary education. Many of the questions in the legislation have been framed on the assumption that we will find the answers in secondary education. We have to expand that thinking to make sure postsecondary education in community colleges and vocational/technical institutions is treated in the same consistent and systematic way as secondary education.

We want to look at the role of performance assessment in changing schools and school systems. We want to look at teacher preparation in relation to the changes taking place in vocational education programs, the larger education community, and the economy. The changes we see in the labor market are being reflected in employer demands, which then are reflected in vocational education programs and courses. This affects the kinds of skills teachers need and impacts on their training and qualification process.

Finally, while it is essential that we do the best possible job of looking at what is representative in vocational education, we clearly must look also at what is exemplary in order to better the enterprise. We probably will want to look at outliers in the other direction—some problem cases—to see why problems occur and how they can best be overcome.

These are the major themes that have emerged from the conference and will help shape the assessment. As other issues and questions arise, they will be considered for possible incorporation into the new National Assessment of Vocational Education.

# Design Conference for the National Assessment of Vocational Education

## Introduction

The 1990 Amendments to the Perkins Act (Public Law 101-392) include a mandated National Assessment of Vocational Education Programs assisted under the Act. Two major thrusts of the Perkins Act are program improvement and access for special populations to vocational education programs of high quality.

As part of the planning for the National Assessment of Vocational Education, the Office of Educational Research and Improvement (OERI) Office of Research sponsored the design conference held in Washington, D.C., March 13-15, 1991. Participants included education researchers, educators, practitioners, association leaders, representatives of business and labor, federal and state officials, representatives of special populations, and congressional staff. Panels addressed various aspects of the legislation in relation to assessment design. Each panel session included a discussion period featuring questions and comments from the participants.

The conference was opened by Bruno Manno, then Deputy Assistant Secretary for Policy and Planning, OERI (now acting Deputy Assistant Secretary for Policy and Planning, Department of Education), who welcomed the participants. David Boesel, Director of the National Assessment of Vocational Education, outlined the purpose of the conference and served as the general chair of the conference. Milton Goldberg, Director of the Office of Research, made a brief statement and acted as chair of the Effects of Perkins on Policy and Practice panel.

This report presents a summary of each presentation and discussion. Several panelists used overhead transparencies. The summaries of their presentations highlight points of the narratives accompanying the visual presentations. The summaries also include special focus on three questions posed by the Office of Research:

1. **What are the principal issues and research questions to be addressed by the assessment in the presenter's particular subject area?**

2. **What are the principal data sources (e.g., computerized files, administrative records, articles, etc.) that can be used to address these issues and questions? If existing data sources are not adequate, what new data could reasonably be collected for the assessment?**

3. **What problems should be anticipated in conducting research on this subject? How can these problems be overcome or mitigated?**

The discussion summaries include major questions and issues raised by participants. The statements in these summaries are syntheses of remarks made by one or more participants.

## Welcoming Remarks: Bruno Manno

Bruno Manno welcomed the participants on behalf of Ted Sanders, then Acting Secretary of the U.S. Department of Education (now Superintendent of Public Instruction, Ohio), and Christopher Cross, then Assistant Secretary, OERI (now Executive Director, Education, The Business

Roundtable). He noted that one of the National Goals for Education adopted by the President and the state governors in Charlottesville, Virginia, in fall 1989 provides part of the context for the Perkins Act. Goal five states: "By the year 2000, every adult American will be literate and will possess the knowledge and skills necessary to compete in a global economy and exercise the rights and responsibilities of citizenship." The task of assessment and the purpose of this design conference are focused, but they should be considered within the wider context.

The federal government's role in education is limited but important. It has two dimensions: 1) To promote national educational equity and to help poor children get a good start in school, giving disadvantaged and handicapped children extra help to assist them in their school years, ensuring access to a college education, and preparing them for jobs. 2) To undertake research and development activities to determine what works; to provide good information on the performance of students, schools, and states; and to provide assistance in replicating successful state and local initiatives across the country.

The National Assessment ties into the second dimension of the federal role in that its purpose is to provide research and good information on what works in relation to the reauthorized Perkins Act.

**Purpose of the Conference: David Boesel**

David Boesel stated that the purpose of the design conference was to obtain advice on critical issues the assessment should address in relation to various areas of the Perkins Act. The presenters and other participants were asked to consider the critical issues for research; the data sources, both existing and new, that can be used to address those issues; and problems that can be anticipated and how they might be solved.

It is important for the participants to consider the feasibility of various proposals for assessment, as the interim report to Congress is due at the end of December 1993, and the final report is due in July of 1994.

**Panel 1: Legislative Intent**

**Chair: Bruno Manno, Deputy Assistant Secretary, Office of Policy and Planning, OERI**

**Jack Jennings**
**General Counsel for Education**
**House Committee on Education and Labor**

Jack Jennings noted that vocational educators have expressed misgivings about the new legislation, especially with regard to the changes in federal allocation requirements. Many feel that the new legislation will destroy some positive aspects of vocational education programs; however, there is also some feeling that the changes will work to the good of programs. The 1990 amendments are the most important federal changes since 1963. At that time, vocational educators fought the provisions of the Act, but vocational education was strengthened and there was increased funding at the federal, state, and local levels.

The 1990 changes reflect a different perspective on vocational education. Vocational education has not been a part of the education reform effort, and, in fact, has been seen as an impediment to academic reform. The Congress has heard from a number of sectors, including business and industry, and has decided that major changes must be made in vocational education. The amendments do make some radical changes and will affect vocational education funding. They will also change the country's perspective on vocational education and, it is hoped, will help integrate vocational and academic education.

The assessment will provide Congress with facts regarding the changes between the new law and the old law and the effects of those changes. The Congress uses facts to counter or support strong opinions voiced by various segments of the population, and when an assessment is good, it is very useful in helping the Congress shape legislation. Business executives are saying that the country's school system must be changed to be a "world-class" one. The federal government is the lever for bringing about such change.

**Jo-Marie St. Martin**
**General Counsel**
**House Committee on Labor and Education**

The report, *The Forgotten Half*, observes that 50 percent of high school graduates do not go on to postsecondary education. The educational system needs to provide a good education for those who do not go on to college. Traditionally, there have been three tracks: academic, vocational, and general. However, students need to be prepared for the world of work, whether through an academic or a vocational program.

The final assessment report is due in 1994; however, many of the provisions in the Act will not be implemented in time for the assessment to look at them. With such time constraints, the assessment will be a formidable task. It is important to have the data in one document that will be available to the Congress in time for the reauthorization. At the local level, assessment of access for special populations should be relatively easy, while it will be more difficult to assess program quality.

**Discussion**

**Major points:**

- Maryland has eliminated the general track, as it had come to be viewed as a program for special populations. With the new law's emphasis on access of special populations to vocational education and the lack of funding for program improvement, students may not want to be in the vocational program.

  Jennings: This could be a problem. The law is unusual in that it provides more flexibility for the school building in how it will spend the money. As long as there is full access for special populations, the money can be used to improve programs. Technological preparation (tech-prep) programs are not as restrictive and allow more discretion than standard vocational education.

  The poorest areas, including cities, often have been ignored. Under the new law, federal dollars will go to the poorest areas. Data indicate that the workforce shows

greatest growth among minorities, immigrants, and women, many of whom live in cities and other poorer areas. States should see the new law as an opportunity to target these populations at the secondary level.

St. Martin: Under the new law, monies are targeted based on poverty levels. Previously, the focus was on the eligibility of students; it is now on the program, at the building level.

- There is a problem of maintaining the level of effort in the states under the new allocation formula. federal funds will probably be supplanted by local funds in many instances. An issue for assessment is how state and local areas will deal with the provisions for improving programs and ensuring access for special populations with limited funding. At the level the assessment needs to consider, the two provisions will require areas to supplant funds.

  Jennings: The Congress wants to see where the money it puts into vocational education is being spent. If it is blended with other funds to support a large number of small activities, it is hard to get accountability. The Perkins funds can no longer be used to support the vocational education infrastructure.

- The law requires that the assessment demonstrate what does and does not work in relation to allocating funds, integration of academic and vocational education, performance standards and accountability, and many other areas. Since the time frame will make it difficult to measure student outcomes, will it be sufficient to provide descriptive information showing what people are doing as a result of the new law?

  Jennings: It will be hard to judge student outcomes on a short-term basis. However, in the particular areas, some things can be measured. For example, in allocation of funds, it will be possible to see how money has been shifted among area schools, among areas of the states, among school districts, etcetera. In terms of integration of academic and vocational education, the content areas and use of an integrated curriculum will give an idea of the extent of integration.

Bruno Manno concluded the session, stating that the National Center for Education Statistics (NCES) has some existing data that can be tied into the assessment; for example, DOVE (Data on Vocational Education), formerly VEDS (Vocational Education Systems).

**Panel 2: Effects of the Perkins Act on Policy and Practice**

**Chair: Milton Goldberg, Director, Office of Research, OERI**

**Norton Grubb, Director**
**National Center for Research in Vocational Education**
**University of California, Berkeley**

***Methodological issues in assessing the effects of the Perkins Act on states and localities.***

Norton Grubb's presentation outlined various methods the National Assessment might use in examining the effects of the Perkins Act, focusing on four areas of assessment.

**Effects on state administration and policy.** The RAND/NCRVE (National Center for Research in Vocational Education) 50-state survey of secondary and postsecondary policies provides good baseline data. The states could be resurveyed to determine how policies have changed as a result of the Perkins Act. To corroborate this information, local districts should be surveyed about their perceptions of the changes in state policies and practices.

**Potential problems.** 1) State policies in areas other than vocational education may affect vocational education. 2) If states are only required to develop performance measures as of 1992, it may be difficult to determine how the measures are being used within the frame of the National Assessment. 3) Determining the effects of postsecondary vs. secondary programs.

**Effects on local policies and practices.** The previous NAVE survey of local districts provides some baseline data on local district uses of Perkins funds. Other data are limited. The local districts and postsecondary institutions could be resurveyed to determine effects of the Perkins Act. Transcript analyses and completion data for the classes of 1986, 1987, 1990, and 1992 could be used also. At the postsecondary level, completion rates using institution specific (or state) data could be used. Classroom observations in sample schools and postsecondary institutions would also be valuable in assessing effects.

**Potential problem**. Distinguishing funding patterns and policies at the state and local/classroom level.

**Effects on articulation between secondary and postsecondary programs**. There are some limited baseline data obtained through a National Council on Occupational Education survey and the NCRVE work on tech-prep programs. The state-level effects on articulation could be ascertained through a survey of state policies. At the local level, where articulation can take many forms, examination of articulation in a sample of communities may be the best approach.

**Potential problems.** 1) In regard to secondary-postsecondary articulation programs, there is wide variance. Some programs only supply information to the secondary schools on postsecondary course and degree options, while others provide methods to allow students to receive credits at the postsecondary institution for relevant courses taken in high school. 2) Determining how many students actually move from high school to postsecondary tech-prep programs. 3) Learning whether or not high school programs change; tech-prep can be a way community colleges and technical institutes affect secondary programs.

**Effects of vocational education on labor market outcomes.** Existing studies using the National Longitudinal Survey, High School and Beyond data, and other surveys have provided a great deal of data. After extensive analyses, two areas remain unresolved: related/unrelated employment and dynamic effects of vocational education on the job market over time. Methods of assessment could include developing and testing crosswalks and other ways to determine the relatedness of employment to vocational education programs, conducting limited surveys of individuals, and exploring further use of unemployment insurance data.

**General observations.** 1) The National Assessment should use the local community as the unit of analysis. 2) Postsecondary issues must be considered. 3) The time frame problem requires focusing on what can reasonably be done by 1993-94. 4) The current problem of state deficits would seem to indicate that this may not be the best atmosphere in which to make these changes. It is especially important to keep the effects of the Perkins Act separate from other effects. 5) The National Assessment should examine cases where change has taken place in vocational and other education and analyze the causes of the change.

**Phyllis Herriage**
**Bureau of Technical and Vocational Education**
**Des Moines, Iowa**

***Effects of the Perkins Act on state administration of vocational education programs [Sec. 403(b)(1)].***

The Perkins Act reduces the amount of funds available for state administration and state discretionary activities. This reduction, coupled with the mandated changes for program structure, content, and emphasis, will cause the states to examine and redefine the role of the state board and staff. If changes at the program level are to be implemented effectively, a major statewide staff development effort will be required. A major question is: What effect will the reduction in funds for state activities have on the quality of local programs?

There is no blueprint for state administration, as the states have various structures, emphases, and role descriptions. State plan development is also very different across the states, as are assessment approaches. Therefore, the local-level impact of state administration is different across the states.

The Act emphasizes accountability. The state-developed systems of performance standards and measures which emphasize outcomes are managed at the local level. Iowa is a strong local control state, and is now looking at outcomes-based vocational education. Iowa is also looking at how the Perkins Act fits with the world-class schools initiatives. Two questions arise in relation to this aspect of the law: 1) Will the shift from state control to local control of processes have an impact on student achievement? 2) Will there be enough uniformity of results to draw conclusions about effectiveness of vocational education programs?

With regard to state delivery systems in general, changes in the methods for distributing funds may impact those systems in a number of ways. States may need to examine the ability of the systems to serve some students. What changes, if any, will occur in the delivery of vocational education?

The increased emphasis on serving special populations in high-quality programs leads to the question: Will there be a state system to provide the type of technical assistance and monitoring to ensure the participation of special populations in vocational education programs?

There are two other major questions related to state administration: 1) What will be the effects of changes in the level of funding and the responsibilities of the state on local programs and student outcomes? 2) How should the actual level of federal funding for state administration be determined given the need for effective planning, monitoring, accountability, and administration of vocational education?

**Lawrence Rosenstock**
**RTVP, Rindge High School**
**Cambridge, Massachusetts**

***Effects of the Perkins Act on local vocational education practices [Sec. 403(b)(1)].***

The Rindge High School is the second oldest vocational program in the United States. Many vocational methodologies are now being seen by other educators as new ways of thinking about education. Although unrecognized until now, vocational education has used team teaching, forms of cooperative learning, and experiential and applied learning. We address multiple intelligences—artistic, kinetic, and social as well as lingual and mathematical—and we use alternative forms of assessment, such as portfolios.

In restructuring, we are seeing exportation of vocational methodologies and importation of academic content. Getting away from narrow skill content is important in light of the fact that only 25 percent of all recent vocational completers in Massachusetts work in a related occupation. It is also true that teen-agers do not know what they want for the rest of their lives—nor should they. We also know from the Bureau of Labor Statistics that most Americans change jobs four or five times. This emphasizes the need for a broader view of vocational education.

Vocational education in "all aspects of an industry" is a platform upon which to integrate. The 300 members of our school faculty have an average age of 52, with only two under age 35. Integration in itself has no meaning for them. They have studied multidisciplinary education and believe in it, but they need to have something to build around. "All aspects of the industry" provides that focus.

Two issues undergird the work of the assessors regarding local practices: 1) How well do people at the local level understand the provisions of the new Act, and how are they getting their information? 2) What are people at the local level really doing?

**Principle research questions related to local practices:**

1. To what extent do local vocational programs integrate academic skills? Do they use a problem-posing and problem-solving approach? Do they teach and reinforce both basic and higher order skills?

2. To what extent do local programs provide all students with knowledge of and experience in all aspects of the industry the student is preparing to enter? (Includes

both the content skills and knowledge and the business management techniques and skills needed to thrive in the particular enterprise.)

3. To what extent are there equal rates of participation and equal rates of successful completion in high quality programs (as described in item 1) for each of the special populations?

4. What level of real participation or what roles do students, parents, teachers, and community members have in terms of actual decisionmaking, adequacy of access to information, and extent of communication among themselves?

5. How well do the local actors understand the new provisions and to what extent have federal and state agencies made clear the profound changes called for by the new law?

**Data sources.** Existing data sources that can be used to address these issues include states' local application requirements, local applications, states' procedures for participatory planning, states' monitoring reports, and local evaluation results.

New data sources include interviews with administrators, parents, students, teachers, and advocates; analysis of curricular materials, observation of local classrooms, and examination of tests and instruments used to assess student performance.

**Potential problems.** Problems in conducting the research will be significant. The new provisions require things very different from existing practice. The lack of exemplars may make it difficult for those conducting the assessment to envision full local implementation. Also, some critical concepts in the new Act, such as "integration with academics" and "all aspects of the industry," may not be universally understood. This may lead to local practitioners using terminology in reporting practices that does not actually reflect the intent of the law. It will be important to construct assessment instruments that will distinguish practitioners who are only using the terminology of the new law from those who are truly integrating.

**Roy Peters**
**Oklahoma Department of Vocational and Technical Education**
**Stillwater, Oklahoma**

***Effects of federal requirements regarding articulation between secondary and postsecondary programs [Sec. 403(b)(8)].***

Several provisions of the Perkins Act are linked to articulation between secondary and postsecondary vocational education programs. The provisions include: 1) vocational education programs that offer coherent sequences of courses leading to job skills, 2) tech-prep education under Title III, and 3) integration of academic and vocational education through coherent sequences of courses so that students achieve both academic and occupational competencies. Eligible recipients may choose to spend Federal funds for tech-prep education programs, guidance and counseling, and apprenticeship programs, all of which are tied to secondary/postsecondary articulation.

**Principal issues for assessment in the area of articulation:**

1. To what degree have the requirements resulted in articulated programs and participation in those programs?

2. What are the outcomes and effectiveness of articulation between secondary and postsecondary programs?

3. What factors underlie successfully articulated secondary/postsecondary programs?

**Data sources.** Multiple data sources and methods of inquiry to address these issues are recommended. Case studies and surveys used together would strengthen the assessment design. Principal data sources include: student transcripts, state performance reports, articulation agreements and related documents, wage record and other electronic data bases, and existing literature.

**Potential problems.** The first major concern for the assessors is the need to define "articulation," which institutions define in many different ways. There also may be differences in defining which students are vocational education completers. Some students may be better served in articulation programs than others, and some programs may lend themselves to articulation better than others.

Other problems related to assessment include incomplete vocational education data bases in some states, differentiating pre-P.L. 101-392 articulation initiatives from those resulting from the Federal requirements, and philosophical differences between secondary and postsecondary education, e.g., competencies or job specific training vs. courses or degrees.

**Joseph Grimsley**
**Richmond Community College**
**Hamlet, North Carolina**

***Effects of the Perkins Act on postsecondary policy and practice.***

From the perspective of the 2-year community college, the most positive aspect of the new Perkins legislation is the tech-prep program and the fact that the infusion of funds from the appropriations committee allows the program to be administered by the state. Tech-prep education has had a positive effect in Hamlet, North Carolina, since 1986, and is a vital part of the school reform agenda.

There are also some negative aspects of the new legislation. In particular, the community colleges believe that the new law's requirement for developing a centralized system of core standards or competencies will take a great deal of time and money. The community colleges already have systems of standards in place; for example, curriculum standards, required program reviews, accreditation standards, and professional certification requirements, which should be taken into consideration. The new requirements raise the specter of government control of education.

The annual evaluation requirements take a great deal of time away from service time. National assessments are not useful to community colleges, especially when they take time away from

serving students. The question is whether the program's priority is to serve students or to satisfy federal requirements.

**Discussion**

**Major points:**

- Although it is important to assess classroom practice, the time frame and the fact that effects on classroom practice are hard to measure indicate that some interim measures would be useful. To look at how state policy affects local implementation of articulation between secondary and postsecondary institutions, institutions could be visited in the near future and again in 2 years to see how the Perkins Act has changed their programs. The same would be true of integration between vocational and academic education.

  It may be hard to separate the effects of the Perkins Act from those resulting from other changes in policy and practice.

- At the community college level, occupational training may be considered academic instruction. When integration is being evaluated, it will be important to be aware of the different ways institutions define academic, general, and occupational education.

- Some states that have been developing standards and measures have determined that institutional measures can be used in the short run, while student outcome measures will be possible only in the long run. The National Assessment might want to consider this in developing its study design.

- In looking ahead to reauthorization of the legislation, it is important to build on existing assessments rather than to begin a new process. If a new data base is created with every piece of new legislation, the assessments will not be meaningful in terms of trend analysis.

**Panel 3: Funding Issues**

**Chair: Barry Stern, Deputy Assistant Secretary, Office of Vocational and Adult Education**

**Gary Hoachlander**
**MPR Associates, Inc.**
**Berkeley, California**

***Expenditures at federal, state, and local levels to address program improvement in vocational education [Sec. 403(b)(2)].***

For many years, the Congress has been asking questions about what the federal money buys in vocational education. There has been no satisfactory answer. The federal portion is about 5 to 10 percent of the total spent on vocational education. However, there are no clear and consistent records

of the amounts the states and local districts spend, and with few exceptions, their accounting is by objective not by program. It is probably not worth the effort to determine the exact percentage of total vocational education funds provided by the federal government, since it is such a small percentage of the total. It is important, however, that some effort be made to see where the federal money is going and what it is buying.

The program improvement focus, as outlined in the law, is fairly clearly defined. It covers curriculum development, including "2+2" and other tech-prep programs, staff development, equipment purchases, guidance and counseling, remedial courses, supplementary services for special populations, apprenticeship programs, economic development, instruction in all aspects of the industry, and comprehensive mentor programs. It is also clear that the federal money is not to be spent to support regular program teachers and commonly held equipment.

**Research issues:**

1. Determining how much federal money is used to support program improvement activities.

2. It will be harder to determine the amounts of state and local money used for this purpose. However, if it is possible to get this information, the assessment should ask if state and local money is being used to support activities in areas where federal money is used to purchase the services, or if it is being used to buy services in areas where there is no federal money available. The substitution issue is a troubling one, and it would be useful to determine the extent to which federal money substitutes for state and local funds so that services purchased with federal money in one place are purchased with state and local money in another.

3. If it is possible to describe the purchase of activities, the assessment should get information on how decisions are made for particular activities, and why they were chosen. What information was used by the decision makers? What was the Perkins Act influence and who has input into the decision-making process? (This relates to issues of governance and participation in decision making.)

**Data sources.** Federal, state, and local administrative records will probably be sufficient. In most states, aid for secondary and postsecondary education goes out under the general state assistance program, and it is a local decision as to how much goes to support vocational education. Some states with categorical funding for vocational education might have some information, but most of the information on program improvement activities is probably found at the local institutions.

**Potential problems.** Finding out what the federal dollar buys at the local level may be difficult, as there are limits on the ability to attribute particular expenditures to the federal money. The new Perkins Act agenda moves away from accounting and toward a performance/outcome orientation. The important question to answer is: Does the federal government effort make a difference regarding student outcomes, job placement, and so forth?

**Lana Muraskin**
**SMB Economic Research, Inc.**
**Washington, D.C.**

***Effects of federal legislation giving the states flexibility in allocating funds to serve special populations [Sec. 403(b)(4)].***

The 1990 Perkins Amendments are the culmination of and a departure from previous federal policy in relation to special populations. In 1990, the location of disadvantaged and disabled students has become the major element in determining the allocation of federal funds under the basic grant. The amendments suggest that Congress has become less concerned with tracing federal funds through the myriad levels of government to eligible individuals, and more concerned with using federal resources to spur institutional and district reform. This is most notable in the emphasis on integration of vocational and academic education and development of a coherent sequence of courses.

Some of the key changes in the new amendments are based on findings of the previous NAVE. Under these amendments, funds are distributed to districts based on factors that should have the effect of directing greater resources to places with concentrations of disadvantaged students--Chapter I and handicapped populations at the secondary level; Pell grant and Bureau of Indian Affairs (BIA) grant recipients at the postsecondary level. The minimum grants are $15,000 to districts and $50,000 to postsecondary institutions. States must make the division of funds between secondary and postsecondary levels explicit and provide a rationale for the split.

The greater flexibility in funds allocation is balanced in the legislation by greater reliance on state and local accountability for student performance. The legislation includes a requirement for creating and implementing a state and local system of core standards and measurements of performance, including competency gains, retention, and completion; additional training obtained; and job placement. The system also must include procedures for taking action when local performance fails to improve. The performance standards must specifically address incentives to encourage services to special populations and the means of integrating vocational education with individual education plans (IEP's).

**Research issues related to regulatory items.** Several of these items in the current legislation provide guidance for program implementation. One is related to mechanisms for exemption to the Pell grant and BIA funds distribution procedure to postsecondary institutions within the state. It will be important to see the kinds of waivers that are granted.

Other research issues related to regulatory items include looking at how postsecondary institutions interpret within- district allocation directions in relation to services for disabled, disadvantaged, and LEP students.

**Research issues related to special populations.** Among the special populations issues that bear examining in state implementation are the rationales for distribution of funds among secondary and postsecondary recipients. Another item for research is assessment of the range of performance standards and indicators and the appropriateness of those systems developed for special populations. Another question is: How do states decide and establish the methods to target funds to places with concentrations of disadvantaged students, and how do they develop and implement the programs?

**Research issues related to redistribution of unspent allocations.** What happens when state evaluations reveal that initiatives in a district have failed to meet performance standards? Do states become involved in joint planning processes with localities? What happens as a result of those planning processes?

**Data sources.** Questions related to regulatory items could be addressed by tracking state implementation of the program in a carefully selected small number of states.

Some issues related to special populations were identified in the previous NAVE and should be reexamined in the current National Assessment to see what has and has not changed through the new guidance and rules process, and through state and local implementation. These issues are the bifurcation between program improvement and special populations, the narrow service provisions for disadvantaged and handicapped students that sometimes took place under the old Act, the kind of service provided to persons because they are economically disadvantaged, uses of program improvement funds, and very small grants to secondary schools. Another issue is inequities in distribution of total grants among districts with varying numbers of poor youth.

From the standpoint of funds distribution, the obvious question is whether federal programs result in greater resources to districts and institutions with highest concentrations of disadvantaged and disabled students. There is baseline information, and the survey should be repeated. The sampling frame would allow an examination of how the new Act may change distribution of funds to area vocational schools when they are in separate districts.

Other questions triggered by the new Act are: How are funds concentrated within multi-school districts and what problems arise in spending funds? What process will schools which previously had little federal funding undertake to decide how new federal funds should be spent? Is it possible to implement the comparability provisions? Who participates in development of local performance standards and indicators, and what measures are adopted? Does any district ever fail to meet its performance goals, and if so, what do they do about it? How does this ambitious reform and assessment program play out at the postsecondary level?

These research questions can be answered through a mix of surveys, case studies, and other methods.

**Steven Barro**
**SMB Economic Research, Inc.**
**Washington, D.C.**

***Determining the most appropriate criteria and methods to direct federal funds to the states and to achieve the goals and objectives of the Perkins Act [Sec. 403(d)(1) and (2)].***

The study of the funding formula was appended to the Perkins legislation, and its language clearly states the Congress' expectations for the analysis. The Perkins Act funds are given to the states through a statutory formula based on population and per capita income. Other aspects of the federal vocational education program have changed over the years; that is, goals, target groups, and, this year, the intrastate distribution mechanism. However, the interstate formula has essentially been fixed since 1963.

Issues in the fund distribution study can be framed at two levels. The generic issues arise no matter what program or formula is being considered. The specific issues pertain to the vocational education formula. The generic questions include the following: Does the formula distribute money in a manner reasonably related to the needs or problems the federal aid is intended to address? Is the formula equitable, treating places with similar needs equally and taking due account of relevant substantive or fiscal differences and circumstances among the aid recipients? Is the formula technically sound? Do the variables represent what they are supposed to, are the data reliable and timely, and are the elements combined in an appropriate mathematical manner? Does the formula create incentives to allocate or use funds or resources in certain ways, and are those incentives desirable in terms of the purposes of the underlying legislation?

Before turning to the specific issues, it is important to take a look at the present formula. The population factor in the formula is usually interpreted as a rough indicator of a state's relative needs for vocational education services. The income-based adjustment factor is designed so that lower income states get more aid relative to population and higher income states get less aid. The factor is bounded to allow aid relative to population to vary by no more than 50 percent, which means that the lowest income state gets 50 percent more aid relative to its population than the highest state. This income factor is usually understood to be an adjustment for differences in states' fiscal capacity.

In considering specific formula design issues, it is helpful to lay out the factors that appear in the present formula or would be added by the various proposals for making the formula more equitable or improving it in other ways. Formula factors are classified under four types of indicators: need, fiscal capacity, fiscal effort, and cost.

**The need factor.** The population factor is not a good indicator of need, because there is no evidence that all states demand or want the same amount of vocational education per capita. Also, the recent emphasis on providing vocational education to disadvantaged and special needs students makes funding based on the general population especially incongruous.

Under the new legislation, states are required to distribute aid among their school districts according to the number of poor and handicapped pupils and to take concentrations of disadvantaged children into account in distributing funds down to the school building level. These same distribution factors could be used on the interstate level. Another option would be to emulate the pupil-weighting schemes some states use to take account of unequal needs in funding their local school districts.

An obvious question comes to mind: Shouldn't federal money be allocated on the basis of some measure of actual activity, such as the number of vocational education students and the number of courses taken? However, there are no state-by-state indicators of vocational enrollment or course-taking that could be used.

**The fiscal capacity factor.** The key questions to be asked in this area: Should the adjustment for fiscal capacity be retained in the formula as it is at present? Is the present per capita income factor satisfactory for this purpose? If not, what alternative method of adjusting for capacity ought to be considered?

Per capita income is not a good indicator of fiscal capacity. Some alternatives include gross state product per capita or the representative tax system index, which is developed and updated regularly by the Advisory Commission on Inter-governmental Relations. There is also a strong

argument that fiscal capacity in education should be measured by a per pupil variable. The study will need to include an assessment of the alternative capacity measures and an analysis of the possible effects of substituting them for the present income factor.

**The fiscal effort factor.** This factor is supposed to indicate the fraction of a state's resources that is devoted to a specified function or program. It is used to reward states for devoting their resources to a function of interest to the federal government. The present formula does not include a fiscal effort factor; however, the new mandate states that it should be considered.

Fiscal effort measures correspond to the fiscal capacity measures. Fiscal effort is the ratio of state/local outlay to state fiscal capacity, and could be measured by the percentage of a state gross product that is devoted to supporting vocational education. However, although data on total spending for vocational education are available, data on state and local spending are not. Therefore, the study can consider only the states' fiscal effort to support education in general.

**The cost factor.** When costs differ among states, equal money does not buy equal resources or services. Therefore, it would be more equitable to make the target variable real dollars instead of nominal dollars in the formula. There is no cost factor in the present formula, so the question is whether or not some should be created and incorporated into a future formula. The study could consider some cost proxies and perhaps indicate the impact of not having such a factor in the present formula and the importance of including one.

The issue of scale is related to cost, and the scale factor is usually justified by stating that small entities experience diseconomies of small-scale operation and should be compensated. The present formula has a scale factor guaranteeing even the smallest state one-half of 1 percent of the total amount of federal funds. However, if scale is relevant, it is relevant at the district, school, and program levels, rather than at the state level. And there is no reason to assume that a small state has small districts, schools, or programs. The study should consider the options of eliminating or modifying the small state factor and possibility introducing a more relevant scale factor.

**Methodology.** This study requires formula simulations showing the distributions that would result from modifying the formula or replacing it with an alternative. The simulation results can be evaluated statistically, primarily by using descriptive statistics looking at interstate disparities and correlations of state allocations to various state characteristics. Multivariate analyses could be used to make comparisons looking at multiple factors.

**Potential Problems.** The data gaps referred to previously mean that data on enrollment and course taking are not available as formula factors and cannot be taken into account in evaluating formulas. Also, the lack of data on the cost and financing of vocational education means that it is not possible to answer the question of how the distribution of federal money alters the overall distribution of resources among the states. The missing data also preclude the possibility of determining a sensible alternative, such as allocating federal money on a matching basis.

**Rosemary Zins**
**Community College of Rhode Island**
**Lincoln, Rhode Island**

***Perkins Act funding issues at the postsecondary level.***

For community colleges, there are three funding issues related to the Perkins Act: the external issue—getting the funds; the internal issue—spending the funds; and keeping the funds—the balancing act.

The regions of the country have not distributed funds in an equitable fashion. Some eastern states have given little or no Perkins money to postsecondary education, while the western states generally have given more. With the general population and labor market trends toward an older group of workers, including many minorities and immigrants who need training and retraining, the pressure is on postsecondary education to help develop a world-class workforce. The perpetual turf issues often prevent secondary and postsecondary institutions from working together. Now, the Perkins Act is promoting cooperation between the two groups.

With regard to special populations, many community colleges have already put a great deal of effort into enrolling special and nontraditional populations. The current formula may actually overcompensate in this area at the postsecondary level. If the National Assessment looks at equity issues at the secondary and postsecondary levels, it will find a great deal of variation. Sex equity is an issue at the secondary level, but it decreases as an issue as programs shift to tech-prep.

There is some concern about gravitating toward a quota system and concern that institutions will be penalized if they do not meet specific numbers.

**Research issues:**

1. Is the flow of funds between secondary and postsecondary institutions reflective of the demographic trends? Is the distribution equitable?

2. Are all Perkins funds, not simply the tech-prep funds, being used to prepare a workforce that is technologically competitive in a global marketplace in accordance with the labor market indicators?

3. Do the strategies for the integration of academic and vocational education include activities to promote curriculum development, student services resource coordination, and inservice staff training?

4. Do the state and regional plans address the systemwide coordination among postsecondary and secondary educational institutions with respect to the power structures, the funding structures, and the articulation efforts?

5. Are special populations not only being recruited but also being retained in vocational programs?

6. How do the programs funded through an allocation process differ from the programs funded through an RFP process?

7. How can long-term followup on program participants be conducted from a practical standpoint once the grant project period has ended?

**Data sources.** Self-report surveys can be used to determine the secondary/postsecondary split under the new Act. Other sources include administrative records on postsecondary credit and noncredit course enrollment and completion; intake surveys including reasons for enrollment; mail and telephone exit surveys; recruitment, enrollment, and retention data comparisons of Perkins students versus overall postsecondary student body data; case studies; descriptions of institutional long-range planning processes; fiscal analyses, including cost per student data; information on fiscal and programmatic coordination with the Job Training Partnership Act (JTPA), JOBS, and other funding sources; and the final narrative summative reports on Perkins programs, presented in a standardized format to allow for national comparisons.

**Potential problems.** Major problems may be avoided if the assessment involves local practitioners from the beginning and by working closely with "2+2" tech-prep associate degree efforts, accessing JTPA data and sources, and assessing demographic and economic development data. The primary danger is developing a national assessment that is not practical to implement or is irrelevant to the practitioners. A successful national assessment will consider the basic constraints connected with the operation and administration of grant-funded programs, allow for flexibility at the local level, emphasize the importance of direct service delivery to students, and measure success by performance and competency outcomes.

**Discussion**

**Major points:**

- The overall question is how financial distribution issues are related to outcomes. How are funds used to impact the program and the people it serves?

- The National Assessment should give some attention to both interstate and intrastate distribution. The focus should be on state implementation of the Act around the three themes of integration, articulation, and accountability. With the relatively small proportion of vocational education money that comes from the federal level, there will probably not be a large programmatic impact. The value of that money is that it provides legitimacy for the federal government to set some new directions for vocational education and to develop a national vision and policy.

- When the new assessment is done, some schools included in the previous assessment may not be used for various reasons. There might be value in looking at schools and colleges that did have federal funds but now receive little or no federal money. This would be a naturally occurring experiment, and those programs could be asked some of the questions asked in the previous NAVE.

- The previous NAVE used a nationally representative sample. It would be useful to resurvey those administrations to see what is happening with the funds and the

programs and practices. It would also be useful to look at communities or counties and take into consideration not only the school administration issues but also the local employment picture and parent and community interest and involvement.

- Because it takes 3 to 5 years to implement a new law, studies done early in the process are really measuring the results of the old legislation. It is important that the assessment developers recognize this fact. Also, most studies focus on criticisms, with the end result that state legislators and other policymakers get the idea that the system is not working and develop a "tear-down" mentality. The new National Assessment should play down the criticisms and play up the improvements.

- It is not clear how the assessment can measure the impact of the new law given the data gaps and limitations. However, the Congress does want information about the major changes in the law. It is possible to look at the old data, compare it with what is now occurring, and make some judgements. For example, the elimination of the set-asides could be studied by using enrollment data to see whether or not the money is getting closer to poor and disabled students. If the new law has not had that result, or if the result cannot be determined, the report can say so. It is also possible to determine if the states have made changes in their programs or in their appropriations.

- With respect to providing information within the authorization cycle, it is important to help the Congress realize that meaningful answers cannot be obtained in a 3- to 5-year period and to encourage them to extend the study.

- The Congress wants the assessment to measure and describe changes, and it also wants a report on the status of vocational education. Transcript studies for the 1990 National Assessment will involve the years 1987-90 and will not be related to the new Act. But the information is useful in reporting the current status of vocational education.

- Ongoing cohort analyses of the classes of 1990 and 1992 would allow the National Assessment to say something on a continuing basis about participation in vocational education.

**Panel 4: Student Outcomes**

**Chair: Steffen Palko, Cross Timbers Oil Company**

**Thomas G. Sticht**
**Applied Behavioral and Cognitive Sciences, Inc.**
**El Cajon, California**

***Assessing academic outcomes for students of vocational education programs [Sec. 403(b)(5)].***

The academic outcomes measured by the NAEP (National Assessment of Educational Progress) probably miss about 80 percent of students' education. The NAEP (and other types of standardized tests) sustains the belief that reading is separate from knowledge. The knowledge

domain is tested in science, history, and other subjects. (Math is a body of knowledge treated as a skill.) The assessments of science, history, and so forth, are not called reading, although the student must read to do the assessment.

To determine the academic outcomes of vocational education, it is first necessary to decide what we need to know. Vocational education students do acquire bodies of knowledge, and they must read to do so. Should vocational students have bodies of knowledge, such as science and mathematics, and should they know how to use that knowledge in producing services or products in the vocational field they are studying? Decisions must be made about assessing vocational education students in regard to reasoning in their vocational domains of knowledge and about the extent to which these students should be assessed on how well they can apply academic skills (reading, writing, and thinking) within their chosen fields.

It is true that knowledge leads to knowledge and that a vocabulary test can be a proxy for a large body of knowledge. Also, it is said in relation to educational reform that if we can get hold of the assessment system, we can drive the curriculum. This is proving to be true with NAEP.

**Data sources.** The Armed Services Vocational Aptitude Battery (ASVAB) includes data on such things as auto mechanics and shop, electronics, mechanical comprehension, as well as on such academic outcomes as general science, reading, and math. It tests technological literacy as well as academic knowledge. As students do better on the NAEP and approach the point where "everyone is average," a test such as the ASVAB can both measure items applying to the world of work and be an independent check of assessment systems developed within the regular education system and purported to be indicators of its effectiveness.

**Potential problems**. There is a move to reform education by developing new assessment systems. The Commission on Skills in the American Work Force has designed an alternative education system that includes elementary and middle schools. At the secondary level (by age 16) the student in school or a youth center (essentially a drop-out prevention mechanism) will receive a Certificate of Initial Mastery. The measures for the certificates are being defined by the Secretary of Labor's Commission on Achieving Necessary Skills (SCANS). The National Assessment should look at this work and consider whether or not the assessment should include items reflecting the SCANS skills.

**James R. Stone**
**National Center for Research in Vocational Education**
**University of Minnesota**
**St. Paul, Minnesota**

***Success of the school-to-work transition [Sec. 403(b)(5)(C)].***

Four aspects of the school-to-work transition will be addressed: 1) sources of the problem, 2) a contemporary vision of vocational education's role in the problem, and what it might be, 3) things lost in recent years that have facilitated the transition, and 4) the research issues and data sources.

The problem of school-to-work transition in this country is highlighted when we compare ourselves to countries in Europe, to Japan, and other places. We are very different because of three kinds of problems. 1) In-school problems: The students of today are becoming increasingly different

from those of the past. There are many more of the students we have been accustomed to neglecting, such as minorities and others who come to school with problems the traditional models of education are not well equipped to handle. That model is inefficient for the emerging student population. 2) Of-school problems: Schools may not be teaching the right things in the right way. Students do not see education as relevant to their world, and do not place a high priority on education. The high school diploma means little to employers, as they know that schools are not teaching skills their employees need. 3) After-school problems: Our adolescents flounder after school. They do not begin to move into career paths until their mid-twenties, unlike students in European countries who generally move into occupations at ages 18-20.

The traditional vision of vocational education's role in the problem is placing a student in a related occupation or in continued education or training in a related field. The new Perkins legislation includes tech-prep and "2+2" programs designed to facilitate this transition, as well as the integration of academic and vocational education. A different way to look at transition is to see it in terms of integration between school-based and work-based learning. Continued learning skills rather than initial job placement should be the measures of school-to-work transition. Children learn in all settings, and the question is how that learning can be organized in ways that contribute to the attainment of skills necessary for success in the 21st century. This is the responsibility of all societal institutions, with schools as the coordinating body.

Among the things we have lost that facilitated school-to-work transition are categorical funding for cooperative vocational education, strong local supervision, and incentives for industry to participate, such as the Targeted Jobs Tax Credit (TJTC).

As a proposal for transition, we could say that 16-year-old students who have not received a Certificate of Initial Mastery cannot work. They must achieve the pre-determined outcomes deemed necessary. Also, students who do not move to the next level can work only if the employers agree to participate in the students' education. This would involve a contractual agreement stating what the student will learn on the job, how it will be learned, and the extent to which that learning contributes to the necessary outcomes. The TJTC program should be revived for employers who participate.

**Research issues.** 1) Measurements of the kind and amount of learning that results from employment. 2) The structure of programs designed to prepare students for movement from school to work. 3) The extent to which work experiences are genuinely integrated into the school work—how they advance the student's competency in basic academic skills. 4) The extent to which on-the-job learning is coordinated with in-school learning. 5) The extent to which cooperating employers display high performance work organization characteristics. That is, the quality of the job (some jobs or firms are better than others).

**Data sources.** The national longitudinal studies, primarily the High School and Beyond (HS+B) and National Education Longitudinal Study (NELS) 1988 have some data that partially respond to the issues. Questions on school-to-work transition issues and program structure could be included in those ongoing studies. The Educational Testing Service's WORKLINK program is beginning to assemble a data base with questions important to transitions, and also could ask additional questions. Suggestions for new data collection include job quality data, measures of integration, information from students and employers, and information from teachers on program structure and operation.

In addition to surveys, a series of case studies identifying sites that are facilitating transition should be developed. Focus groups might be used. Some experimental designs, using communities and states willing to participate and develop new legislation and tax credits, could be implemented, allowing comparison between the experimental situations and those using a traditional model.

**Potential problems.** Not all programs fall into the same mold. Measures to look at how program structure affects transitions must be developed. The teacher will be a confounding variable in this measure, but structural aspects of the program may compensate for teachers who are not as enthusiastic or dedicated as they might be. Finally, evaluation has many purposes; the hope is that the National Assessment will focus on program improvement.

**Discussion**

**Major points:**

- The most valuable skill a vocational education program imparts is probably learning how to learn, or creating in the student the ability to adapt and learn in an ever-changing work environment. This holds some fairly significant consequences in relation to assessment. For example, it points to a move toward a process-oriented assessment, rather than only testing knowledge. This, in turn, represents a quantum leap in test design and assessment design and cost as we move from multiple choice testing of informational knowledge and enter an era of process or operational knowledge.

- The statements about using the lack of acquiring a Certificate of Initial Mastery as a means to keep students out of jobs and in school are reminiscent of previous efforts to homogenize schooling.

  It is true that if the test is the only option, it will become an obstacle for some students. However, if it is one of a number of alternatives coordinated by the schools, it can be useful. Providing alternatives to traditional schools will not be cheap.

- From an instructional point of view, should we provide a wide range of knowledge domains and hope that students move into particular areas of in-depth study? It is true that the more literate person is the one who knows a lot. A person can be taught to read a book, but if the person has no way of connecting with the content of the book—the body of knowledge it represents—it is difficult to learn anything from it. The purpose of education in the K-12 system is to build a large number of bodies of knowledge. Another purpose is to build common bodies of knowledge among people, so they can communicate with and understand each other. One problem is that we do not have a good model or concept of the mind, so in teaching and assessment we deal with manifestations of the mind rather than the mind itself.

**Thomas Bailey**
**Teachers College**
**Columbia University**
**New York, New York**

***Relevance of vocational training to subsequent employment [Sec. 403(b)(5)(D)].***

There are various alternatives that can be considered when we look at the relevance of vocational training to subsequent employment in terms of assessment. Are we talking about direct transfers of specific techniques or pieces of information? Are we referring to general abilities or skills, or to broad attitudes and behaviors? The way relevance is perceived—and the way it is measured—will vary depending on the perspective.

To answer these questions, it is necessary to understand the purpose of vocational education, although it often is difficult to do so. One way of interpreting the 1990 Perkins Act is to see it as a way to attempt to redefine that purpose. Therefore, we will have a "moving target" as we look at historical data related to past relevance in comparison with the present.

There are three models of vocational education. The first and simplest model is preparation for a specific occupation. The second model is more general in scope, providing broad occupational preparation and a basic educational foundation for non-college-bound or non-baccalaureate students, including community college students. This model emphasizes motivation, career exploration, and building connections to the labor market. The third, more radical, model essentially rejects the distinction between vocational and academic education for all students. This raises the question of how much integration we will provide to students who are explicitly headed towards selective, 4-year colleges and universities. It appears that the Perkins Act is attempting to move vocational education from model one to model two, but probably cannot be a primary vehicle for moving to the third model.

The relevance question will change within the context of each of the three models. In model one, with preparation for specific occupations, we get into the training-related placement concept. A great deal of research has been done in this area, especially in the previous NAVE. The course-utilization rate was developed, using the courses and a crosswalk developed by the National Occupational Information Coordinating Committee (NOICC) to relate particular courses to particular jobs. Measures for fall 1985 indicated that the course utilization ratio overall averaged 50.9, with women's ratios about 20 points higher than men's. This means that about half of the vocational courses taken were relevant to the jobs. The question is whether or not this is a sufficient rate, and there is no answer. If skills and occupations are defined broadly, the ratio will be higher than if they are narrowly defined.

This type of measure will become more irrelevant in the second model. When students are taught information about an entire industry, such as construction, a wide variety of courses are taken and course-to-job crosswalks cannot be developed. The skills and knowledge learned can also be transferred to a number of other occupations. In this model, broader measures are needed to determine relevance. One might be to look at types of generic work skills needed, perhaps those the SCANS is developing, and determine whether or not those skills are being taught in school courses.

However, it would be very difficult to account for the fact that students are training for various occupations and to develop variations for the occupations.

It is not clear whether or not people hold only one view about the third model. Views conflict as to whether we are talking about a fundamental restructuring of secondary and postsecondary education, or about a reform of vocational education. The Perkins Act's impact will probably be much stronger in bringing academic instruction into traditional vocational education than in applying a more contextual-based or applied learning approach to traditional academic courses. This model cannot be assessed, because it does not yet exist. However, the National Assessment could pay more attention to those programs where the model three strategies are being applied to a range of students.

**Research issues.** 1) The assessment must be explicit about the particular model and purpose of vocational education being considered when relevance is being measured. 2) More research is needed on why students do not enter the occupations for which they presumably trained. 3) Analyses of wages and unemployment rates should be done, as improved methodologies exist for measuring which types of programs lead to higher wages. A research strategy might be to set up experiments with different characteristics, evaluating the effects and isolating characteristics of the successful programs. (This probably cannot be done within the immediate time frame.) 4) Research should be done on broader applications of integration strategies and approaches outside of traditional vocational education.

**David Stevens**
**University of Maryland, Baltimore County**
**Baltimore, Maryland**

***Occupations and earnings of former vocational education students.***

In designing the National Assessment, it will be important to consider the points made in the previous presentation about various models of vocational education and decide what the present model actually is.

Concern has been expressed about the 3-year period between now and the time David Boesel first appears before Congress with a report. It is impossible at this time to predict what might happen in that period, so the assessment design must be sensitive and have built-in elements to respond to some of those unknowns.

**The principal research question.** Are former vocational education students working in jobs that are consistent with their employment objectives and acquired competencies? If not, why?

**Other research issues:**

1. The complex definitions of "occupations" for assessment purposes. The Labor Department is working on a revision of the *Dictionary of Occupational Titles*, and NOICC and its state counterparts have occupational classification systems. The previous NAVE used those systems in crosswalks. However, the new National Assessment must take into account the major changes occurring in the industrial

environment, where occupational specificity is rapidly disappearing and crosswalks will be more difficult to develop.

2. The distinction between wage rates, earnings, and compensation. Wage rates do not reflect the time worked or benefits, and earnings are the actual dollar amounts paid in wages. Compensation includes job security and benefit packages.

3. The importance of knowing previous and concurrent employment histories of vocational education students, not just subsequent employment outcomes.

4. Multiple institutional sources of vocational training. In the assessment, these various institutions should be treated as independent organizations.

5. Unit(s)-of-analysis decisions will determine the ultimate "actionability" of findings. As the assessment design is developed, it is important to be clear about whose decisions might be different based on the possible assessment results.

6. The relevance of exemplary and abysmal performance. Congress probably is not interested in average performance, so the assessment should focus on the outliers at both ends of the spectrum.

**Data sources.** 1) Ongoing state data collection/analysis programs (Florida is doing especially creative work). 2) Available administrative data sources. The unemployment insurance wage record data is kept by the states. It allows tracking of the individual over time and shows employers, locations, time in particular jobs, changes in occupations, etc. 3) Case studies.

**Potential problems.** 1) Multiple sources of measurement error. Vocational students may not use the skills they have learned, for reasons ranging from poor marketing skills to a downturn in the economy, with a loss of job possibilities. Vocational education programs cannot be held accountable for many of the student's post-program choices. 2) Limited time to compile and analyze pertinent data. 3) Confidentiality restrictions. State laws and the Buckley Amendment allow use of data for program evaluation purposes, with the statutory stipulation that no individual institution's or person's identity can be revealed. 4) Costs of data collection and analysis. This factor and the time frame constraint make it particularly important to rely on efforts already underway.

**Discussion**

**Major points:**

- The previous NAVE revealed that at both the secondary and postsecondary levels, virtually all students take a vocational course at some point during their school careers. This makes it difficult to identify precisely the vocational education students. Rather than attempting to identify and focus on the individual vocational education student, perhaps the assessment should try to determine the effects of various rates of participation, different mixes of academic and vocational courses, et cetera, on various types of learning and labor market outcomes.

It is true that students still in school may be difficult to identify. However, program completers *can* be identified. The concept of "the vocational education student" is very strong, and the National Assessment probably will need to talk in terms of individuals and their degree of participation in various kinds of vocational education.

- It may be necessary to broaden the vocational education model to look at the kinds of academic experiences the vocational students have. In any model, the student who takes academic coursework in the "general track" tends to be taught by less competent teachers than those teaching in the college preparatory track. This student is a very different completer than one in a high school with a core curriculum, where an attempt is made to teach all students higher level math and science courses. Defining vocational education students only in terms of their experiences with the vocational teacher will not look at the serious problems in secondary education related to equity.

- It is important to look at the total experiences people have in secondary schools and the impact of those experiences over a longer period of time than one or two years after completion. Also, regarding the employment context of outcomes, it is important to remember that about 10 percent of male completers go into the military.

- Vocational student organizations are often asked how the students compare to others. Data are desperately needed. The National Educational Goals Panel is attempting to coordinate with SCANS, and if the National Assessment could play a part in drawing up a correlation, it would be extremely useful.

- Perhaps the issue of training-related jobs is not that important. As the concept of vocational education is broadened and we move toward its integration with academic education, we are trying to increase students' occupational options. Therefore, why is it important to know whether or not they enter jobs they have trained for, if other outcomes in their lives are as good or better than if they had entered the particular field?

- Occupational specificity as an outcome in vocational education became important in World War II. At that time, vocational education played a large role in helping the country become technologically literate. The concept of technological literacy is crucial. To the extent that vocational education makes people technologically literate, it enables them to survive in society, to become employable, and to adapt to new developments in technology. The National Assessment must respond to the Congress' mandate regarding outcomes, but the broader concept of technological literacy should not be overlooked.

  This concept ties in with the broader model of vocational education and the idea of "all aspects of the industry." Finding measures is difficult, but the ASVAB may provide a start, as it looks at nontraditional measurements.

**Robert Martin**
**U.S. Chamber of Commerce**
**Washington, D.C.**

***Employer satisfaction with and involvement in vocational education programs [Sec. 403(b)(6)(D)].***

The heart of the issue for employers is that vocational education should be a part of the economic development strategy of local communities, the states, and the nation.

Reinstating the TJTC program has been suggested. However, this program does not reflect the area where jobs are being created. Employers who have used the credit are large companies with tax departments. Our organization does not believe the program should be authorized. The vocational education students are not being placed in *Fortune* 500 corporations, but in the 12 million jobs created by the other segment of business and industry. Incentives to encourage smaller businesses would need to overcome the perception that the paper work required is too big a burden.

From the business perspective, there are a number of important, general questions:

- Is there a connection at the state level between vocational education programs' vision and operation and the job opportunities in the state?
- Are the vocational education goals and objectives being articulated and figured into the state's planning process?
- Do vocational education directors meet regularly with the state governor and planning and budget staff? Does the economic development plan consider projected job growth? Is it based on companies relocating to the state or expansion of the existing base?
- Are vocational education curriculum requirements, at both the state and local levels, designed to meet employer skill needs?
- Is a statewide effort underway to enhance the basic skill foundation of technical employees?
- At the local level, is there sufficient and qualified business representation on advisory committees?

**Research issues.** Determining 1) the economic benefits to employers of hiring vocational education students, 2) the economic benefits to students of entering and staying in vocational education programs, and 3) how quickly vocational education completers recover from setbacks related to economic downturns and re-enter the job market. (The unemployment insurance data would be useful in tracking and comparing vocational and non-vocational students.)

**Data sources.** The governor's state economic development plan and the mayor's and Chamber of Commerce's local economic plan are the primary sources for data important to businesses.

**Anthony Sarmiento**
**AFL-CIO Education Department**
**Washington, D.C.**

**Comments**

Before designing the assessment, it is important to reach an agreement on the goals of vocational education. And even if we say, for example, that one goal is better articulation between the educational system and the workplace, do we agree on which way the workplace is going? There may be competing trends among employers, and we must look at job quality as well as the number of jobs. Is there really a skills gap; do employers believe there is a skills gap?

If we start to examine the kinds of skills and knowledge employers look for, we can ask about the training provided by employers when people are on the job. Although billions of dollars are being spent on worker training, studies by the American Management Association, the Society for Human Resources, and others show that this money is being spent primarily on managers in high-tech occupations. Most of the front-line workers receive only orientation and safety training, and people in manufacturing or service industries generally are given little training to upgrade their skills.

The report, *America's Choice*, frames the problems we face in our economy and the society in a useful manner. The report states that, faced with the choice of high skills or low wages, business and industry are increasingly choosing low wages. If this is the route we take, the vocational education system that will serve the needs of the employers will be different from one which is trying to meet the needs of the small percentage of employers who are moving toward a high performance work organization where workers' judgement is valued.

According to *America's Choice*, most workplaces are looking for workers who can follow instructions and they do not value higher skills that require judgment. They are still following the scientific management principles of the Frederick Taylor Workplace model. The labor movement wants people in trades and crafts, manufacturing, and service industries to have the broadest possible range of skills, not only for the benefit of the employee and the workplace, but also because it makes sense for our society.

In looking at specific aspects of the new Perkins Act, the issue of the relationship between basic or prerequisite skills and higher-order or critical-thinking skills needs to be considered. We need a new model for integrating these two domains. We cannot separate knowledge and skills. The definition of literacy is "Using printed and written information to function in society, to achieve one's goals, and to develop one's knowledge and potential." This definition must be operationalized.

We have heard a discussion of the "all aspects of the industry" concept. We not only need to help the potential carpenter understand how to market his services, keep books, get permits, etc., we also need to give young people an idea of how the workplace in general has evolved. Such questions as where the 40-hour work week came from help youth get an idea of the development of things they take for granted, such as work and vacation hours and health benefits. The importance of this lies in the fact that many times, when employers are asked about the skills they want and do not have in young employees, we begin to see that the employers' problem is actually with the attitude of many of the young people.

When we begin to think about integrating job and classroom experiences, we must consider how this can be done when employers are competing in an environment where the short-term return rather than long-term competitiveness is valued. How do we create situations where there are more learning opportunities for young people, both in and out of school? Perhaps we should consider practices similar to Japan and Western Europe which require employers to spend a minimum percentage of their total payroll cost on training their current workers. We also need to think about youth apprenticeship. The apprenticeship bill introduced by Representative [Richard] Gephardt and Senator [Sam] Nunn does not take into account the fact that placing more young people in the workplace does not guarantee that the job will include educational content. The youth will probably be placed in routine jobs which can help them develop good work habits but may lead only to the low-wage path.

The vocational education assessment framework should get at the values of helping young people learn to think independently and frame problems creatively. These skills are needed for all types of careers, and for the good of society.

**Becky Dunn**
**Education Services**
**Russell Corporation**
**Alexander City, Alabama**

**Comments**

We have heard a great deal about theory, and techniques, and the Perkins Act. This presentation will give an idea of what one corporation is doing. The Russell Corporation is the nation's largest manufacturer of athletic wear, from uniforms for professional sports teams to sport and leisure wear for mass consumption. The corporate headquarters are in Alexandria City, Alabama, a community of about 17,000 people. Employees there and in several plants in various cities total about 13,000.

The company has been in operation in Alexandria City since 1902, and has a long-time interest in education. It is taken for granted as an employer, and many residents do not grasp the technological advances of recent years. One strategy the corporation used to try to bridge the gap between education and the workplace was to take the high school teachers and teachers at the vocational education center on a tour of the plant, so they could use that experience in the classroom.

On the national level, the company has a "Stay In School" advertising campaign. Ads have run in National Education Association journals, *Fortune* magazine, and a number of sports journals. The company is identified with athletics and wanted to convey to the nation its understanding of the importance of an academic background, diplomas, and degrees.

We are accountable for our products. We could not stay in business otherwise. We receive the products of the school system in our workplace, and we believe that the education system should be more accountable. Our corporate offices have a quarterly meeting with the local school board, the superintendent, and the high school principals to discuss how we can work together. One result is that employees are allowed time with pay to attend parent/teacher conferences. The policy is working well, with over 600 conferences in the first school quarter.

The Russell Education Committee has been established and will look at the functional context and determine the training needed for the average hourly worker coming into the company. The company also has a partnership with the Adult Basic Education (ABE) program. It sponsors salaries and in-kind services to allow ABE to function year-round. There is also a partnership with the vocational training center. The company supplies machines, maintenance, and instructor training and offers first- choice jobs to students in the program.

Management is becoming somewhat leaner and the number of people at the middle management level is decreasing. With these shifts in management practices, the Russell Company needs more 2-year technical graduates. It is very interested in the "2+2" and tech-prep programs.

Last year, Alabama had a Governor's Internship in Industry program. High school teachers spent 6 weeks in business and industry. It was a highly successful program. Following the 6 weeks, teachers within districts came together and developed two or three lesson plans based on the workplace needs. The entire volume of plans is available to any teacher in Alabama. The Russell Corporation would like to see the curriculum for teacher education revised to include a provision for onsite experience in business and industry prior to entering the teaching force.

The Russell Corporation *is* interested in multi-skilled employees who know how to make decisions, solve problems, and continue to learn. This can only be done through a broad-based curriculum and "learning how to learn."

**Discussion**

**Major points:**

- The public perception of vocational education often is that it is a major training program for people entering occupations traditionally classified as "blue collar." When vocational education is associated with JTPA or welfare programs, many people see it as geared to "others" and not to their own children. If this is the prevailing thought, vocational education programs will not have the level of quality and the financial commitment needed. The National Assessment should look at the climate in which vocational education exists, including attitudes in the community.

  The question could be taken a step further to ask why our society does not value people who work with their hands. We give more respect to people who work with their heads. But it is true that people who work with their hands also need to work with their heads to be effective. This problem may begin to fade as the distinction between job-specific and general education blurs. Integration between vocational and academic education intended to help all students learn thinking, problem solving, and cooperative working skills should help destigmatize vocational education.

  A methodological question related to the issue of attitudes is that the way students and school staff identify the students as general, college, or vocational track is not captured by studying transcripts and counting the number of vocational and other courses. Attitude is both an outcome of schooling and an intervening variable which has an impact on students' future, and should be looked at along with the transcript data.

- The issue of concern about whether or not an individual enters the occupation for which he or she trained raises the question of how much specialized training should be offered. In many occupations that support our society, older workers and craftsman are the major part of the workforce. Will products and services in some of these occupations deteriorate if specialized training is not provided for young people? How much specialized training should we expect the employer to provide? If we are going to teach students generalized knowledge of the workplace, this can be done without using vocational education, which is expensive.

  We must keep in mind the fact that most vocational education program completers go to work for small businesses. Those businesses want workers who have the requisite job skills and can think; the issue is not head vs. hand. There may be a danger that if vocational education becomes too generic, we will have a generation of students who know a little bit about a lot of things, but have no specific skills or knowledge.

  There is nothing wrong with preparing people to enter the job market and get work experience, and then having them decide they want to go back to school to learn something else. The most difficult person to place in a job is the high school graduate with no specific skills. We have this in the general education system, with about 55 percent of the school population not being prepared for work. But vocational education, with about 27 percent of the population, is blamed for the lack of preparation.

**Panel 5: General and Special Populations**

**Chair: Charles Benson, National Center for Research in Vocational Education**

**Osa Coffey**
**Virginia Department of Correctional Education**
**Richmond, Virginia**

***Special considerations in assessing vocational education in correctional facilities.***

The correctional population in the United States is increasing at the rate of about 12 percent a year. The costs are enormous; the one million adults cost about $20,000 per person per year, and the juveniles about $45,000 per person per year. If vocational education can help reduce the prison population, it would be a very good investment.

In terms of the Perkins Act, the correctional population is not a special population that people are very concerned with, and the 1 percent set-aside for offenders is controversial. But without that money, many states would have no funds for vocational education in correctional institutions. Those who design the assessment should keep in mind the fact that there is no uniform philosophy or intent as to why the federal government has funded vocational education for this group.

Vocational education for offenders can be considered from several points: 1) It is an educational equity issue. These people have usually missed out on mainstream education, and we need to make it up to them. 2) The economics, as noted above. 3) In connection with point two,

vocational education might help reduce crime. 4) Such programs are good for inmates because they provide a productive outlet for the inmates' energy.

The assessment can be helpful in producing findings that will give Congress guidelines on whether and how they should continue funding for this special population. The design should look at both process and outcomes.

**Research issues:**

**Process**

1. What happens to Perkins monies in corrections?

2. What input does corrections have in the state planning process for the Perkins Act? Is there a representative of corrections on the state council or planning committees, and if so, what difference has it made in funding?

3. Who in corrections received the money? The definition of "criminal offender" is broad, including people charged with crimes they did not commit and ultimately are acquitted of committing. These people could be counted under the 1 percent set-aside. Also, in addition to prisons and jails, the definition of corrections can include detention centers and juvenile correction centers, as well as probationers and parolees. If the money is thinly spread across this broad spectrum, it will accomplish nothing.

4. What other monies are available to and used by corrections? (For example, displaced homemaking and sex equity monies; if corrections can be classified as a local education agency [LEA], several other types of funds are available.)

5. Distribution patterns in relation to the various administrative structures for correctional education. There are eight Correctional School Districts in the country that distribute money in various ways. Do those districts get more Federal funding than the other types of administrative structures?

6. Is the 1991 Perkins Act bringing more or less money to the criminal offender special population?

7. What effect is the "hold harmless" provision in the Perkins Act having?

8. What are the variations among states in per capita expenditures of Perkins money on inmates?

9. How does the correctional system use the Perkins money?

**Outcomes**

The correctional institution population is different from the general population. The corrections population is multi-handicapped and disadvantaged, with a dropout rate of 80 percent, an illiteracy rate of 60 percent, and high incidences of learning disabilities and other handicaps,

addiction, and abuse as children. The background unemployment and poverty rates are about 40 percent. Even if people in this population leave prison with certificates and high-quality vocational education, they will have difficulty finding jobs because of their criminal records. Therefore, it would be very hard to measure the program's success by whether or not completers have jobs.

Other correctional constraints that make the prison program different include available time, restrictions involving tools, and sudden transfers and releases. The assessment could look at the impact of these factors. Congress also will probably want to know what effect the 1 percent set-aside had on the recidivism rate.

The major question for people in corrections is: What vocational programs have the highest success with what types of offenders, as measured by post-release employment, economic status, and reduced recidivism? Although corrections administrators do not expect a definitive answer, the assessment can provide information to guide their efforts.

**Data sources.** It will be possible to find data on recidivism through the state departments of corrections. However, data on how former inmates are faring in terms of employment, staying off welfare, etc., will be difficult to find. Parole records in state employment commissions might yield some useful data.

The Department of Education has just funded the National Correctional Education Data Collection Project. A draft survey instrument has been developed and will be piloted after approval from the Office of Management and Budget. The National Assessment should tie in with that project.

In terms of case studies, the Correction Education Association and the Association for State Directors of Correction Education would be useful sources. It is also recommended that a correction expert be included in the overall assessment effort.

**Discussion**

**Major points:**

- If there is a limited amount of resources for research on vocational education in correctional institutions, the major types of institutions covered should be prisons and juvenile correction facilities. To determine the impact vocational education can have on recidivism or post-release employment, it would be wise to investigate institutions with broad programs focused on vocational education. The issue is not to determine whether or not poor correctional education works, but if good correctional education works. (The Vienna Correctional Center in Southern Illinois is recommended.)

- Identifying the target population may be difficult. States run literacy and school-completion programs for offenders, and may have limited money for vocational education. Therefore, they may target vocational education to people who will be released in the short term. The assessment will need to look at this issue. People on probation may be good sources of data on work transition.

- Inmates involved with drugs present a problem. How can they be convinced that vocational education is valuable when they can make thousands of dollars a week

selling drugs? Many of the young inmates jailed for drug offenses also have an attitude of fatalism about whether or not they will survive when they leave prison, and they are not interested in making an investment in training or setting different goals for their lives. However, from the administrative perspective, this should not be a reason not to offer vocational education.

**Jerry Slater**
**Salish Kootenai College**
**Pablo, Montana**

***Special considerations in assessing vocational education in tribal institutions.***

The new Perkins Act has eliminated many set-asides; however, the 1 percent set-aside for Native American programs is still in place, and educational institutions operated by the 400 tribal governments can apply for funds on a competitive basis. Most apply to operate programs on a 3-year basis. This is different from the process used with the state. Our applications must document our connections with the tribe's overall economic development plan. If the program is not properly managed in terms of finances or meeting the objectives, it is not funded again, and in cases where problems are particularly severe, the program can be dropped midway.

The federal government's responsibility for providing educational services to Native Americans stems from the treaty agreements entered into when the reservations were established. The first educational services were provided in schools on the reservations by missionaries from various religious denominations. During the time of relocation, education for Indian people was provided through BIA boarding schools. Children were gone from their families for months at a time and were often subjected to abuse of various kinds. The major emphasis in Native American education was vocational education, usually in the narrowest terms.

The federal government's education efforts for Native Americans have failed. The Native Americans' cultures have been changed, but not eradicated, and the people have not been assimilated. However, the qualities of life and practices that allowed Native Americans to live in relative harmony with their environments for thousands of years are gone. This has resulted in tragic social conditions for Native Americans. Alcoholism, unemployment, and drop-out rates are extremely high, and conditions are comparable to those in third-world nations. The 1 percent set-aside is serving a disadvantaged target population and clearly meeting the intention of the law.

Over the years, the federal government has veered back and forth about whether and what it should provide in educational services. Recently, the BIA has decided that it is not responsible for Native American education, and that it is the states' responsibility. However, the states say that the reservations are federal land and are exempt from taxation, so they have no obligation and are justified in excluding Native Americans. Although there are federal laws prohibiting exclusion of Indian people in voting and holding school board positions, the states still practice such exclusion.

Recently, Native Americans have had some successes by controlling, designing, and implementing their own educational programs. The 1 percent set-aside in vocational education has allowed access to funds to accomplish these programs. The Native Americans see educational reform as essential to avoiding the failures of the past. They are ambivalent about vocational education because of the previous attitude that Indians can only work with their hands. This has resulted in the

desire for a broader understanding of vocational education, which includes integration with academic instruction.

The effectiveness of vocational programs in tribal institutions should be assessed in terms of a community unit analysis. A great deal of resource sharing takes place at the tribal level, and programs interact with one another; for example, day care, general assistance, welfare, and education. These groups together develop the overall economic development plan.

Salish Kootenai Community College was established about 10 years ago as a result of coordinating vocational education and other funds. It serves over 800 students. The college buildings were designed and built and are maintained by the vocational education students.

**Research issues.** 1) Do the nonschool programs integrate academic and vocational-technical education? 2) Do the nonschool programs have adequate support services, such as basic skills development, tutoring, counseling, career education, and GED preparation? 3) Does the program address the cultural differences and utilize cultural strengths? 4) Is the program staff culturally sensitive? 5) Is the training correlated with the tribal overall economic development plan and/or market surveys?

**Data sources.** 1) Grant proposals should reflect instruction information such as curriculum, entry and exit skill levels, and staff qualifications. 2) Student files and transcripts should reflect student accomplishment and outcomes. 3) Annual program reports should reflect accomplishments. 4) Specially developed self-assessment forms could be completed by grantees.

**Potential problems.** 1) Considerable diversity in fund recipients; that is, BIA secondary schools, public schools, tribal colleges, Urban Indian organizations, and programs managed by tribal administrators. 2) Rural, isolated areas, and urban areas have different economic bases. 3) Considerable differences between school systems and urban or tribally administered systems in record-keeping requirements. 4) Definitions (for example, "Indian," which has 42 written definitions in the federal government, and "integration" of vocational and academic education).

Perhaps the best solution to data needs is to require grant recipients to complete self-assessment and other information forms. Also, someone who is familiar with and has been involved in Indian education should be included in the assessment design process. As with the correctional institutions, successful programs that have impacted positively on the population should be assessed.

**Discussion**

**Major points**:

- With the great diversity among the Indian populations, it will be important to try to find a group that represents some commonality. Two organizations—the National Indian Education Association and the National Council of Tribal Chairmen—are representative of the Indian people. There are also 24 tribal colleges in the country, chartered by their tribal governments and serving the people on the local reservations.

- Language is an important issue. The definition of "limited English proficiency" impinges on Native Americans as well as other groups. Vocational education funds

are not used for language programs, although those programs are integrated with training programs. There is a great deal of diversity among groups regarding the amount of their own language they speak and understand. However, their languages are viewed as part of their identity, history, and heritage.

- Over 90 percent of the Mississippi Choctaws speak their own language, and 80 percent of the children entering school are non-English proficient. A majority of Navajos also speak their tribal language. When programs are evaluated in areas such as these, language becomes a real concern. In Mississippi, the vocational education programs include teaching assistant interpreters. Strong retention of tribal, non-written language will be a factor in how the vocational programs function.

- For many tribes, the extent to which Perkins funds have led to program improvement will come down to the question of the total absence of a program versus establishment of a program, using Perkins funds. Due to the coordination of programs and use of funds from other sources such as JTPA, it may be difficult to isolate the effects of Perkins funds. But everything having to do with the vocational program itself— staff, equipment, facilities, and so forth—will have been paid for with the Perkins funds.

- The issue of preparing qualified teachers is a major concern for Indian programs. It is important to look at the impact of the Perkins funds on teacher recruitment, preparation, and retention; staff qualifications; and availability of instruction.

- Because of the rigorous funding standards in the RFP [Request for Proposal] process, including verification of a 65 percent placement rate for program completers, the assessment should have available data on job placement and academic outcomes, as well as on employer involvement.

- Most tribes with BIA-funded schools do not fit the legal definition of an LEA and have no secondary vocational programs. It would be worthwhile for the assessment to look at the extent to which this deprives communities of secondary vocational education and the impact on articulation as defined by the Perkins Act. There also will be no integration at the secondary level.

**Comments by Panel Chair Charles Benson**

In his comments earlier, Jack Jennings seemed to say that unless the National Assessment shows progress toward new goals, the federal contribution will be greatly reduced, and that, in turn, will drive down state and local funds. When asked what results would be acceptable, Jennings replied that the Congress would be looking for quantitative answers.

The problem here is that we will be implementing a new Act at a time when many states are in financial difficulty, and it will be hard to get good new programs in place in 2 years. Chapter I, Title I, was implemented too rapidly, and years were lost while people discovered that more than equipment was needed. The same thing could happen with this program.

If the states feel they have to implement a large number of vocational/academic education programs in 2 years without sufficient funds, the programs will not be of high quality. The possible

result will be that the opportunity to use strong pedagogical aspects of vocational education as a means of reforming the secondary and college educational systems will be lost. The programs need time to lay a foundation for vocational and academic teachers to begin talking and working together. In many schools, the groups do not even know one another or have any knowledge of what the other is doing. A 2-year period of staff development would be very useful in some states.

A second concern is related to Jerry Slater's comments. It is important that the National Assessment include representatives from the special populations. An affirmative action search should be undertaken to identify members of special populations who could receive research contracts. The National Assessment also should ensure that members of special populations are included on advisory committees and panels and attend planning meetings.

**Carolyn Maddy-Bernstein**
**National Center for Research in Vocational Education**
**University of Illinois**
**Champaign, Illinois**

***Effect of flexibility on the delivery of services to special populations. Effect of requirements regarding criteria for services to special populations and participatory planning [Sec. 403(b)(4) and (8)].***

The 1990 Perkins Act provides increased flexibility to identify large concentrations of handicapped and other special populations in the areas of greatest economic need. Some people are frightened at the idea of losing the set-aside, but it can be seen as an excellent way for programs to regroup and better serve the people Congress intends them to serve.

The flexibility of delivery systems raises a number of issues: Will students with special needs be served in areas where there are not large concentrations of people, such as rural areas? Will people in groups traditionally difficult to serve, such as those with severe mental disabilities, be left out?

**Research questions:**

1. To what extent are each of the defined populations being served? It is important to look at each of the subgroups separately.

2. To what extent are special populations being served in areas of greatest economic need? To what extent are they being served in other geographic areas?

3. To what extent are areas with greatest concentrations of special populations being served?

4. How have states differed in their vocational education delivery systems for special populations? Are exemplary delivery systems emerging? Are cost-effective delivery models emerging?

5. Are funded vocational education programs receiving funds of the size, scope, and quality to be effective?

6. What is the impact of the contributions of state level personnel (i.e., administrator of the Disability Education Act, Chapter I, and LEP programs) required to review local plans?

7. What are the implications from the findings for future federal funding?

8. What support services at the state and local levels have been added or taken away as a result of the new legislation?

**Data sources.** 1) State plans for vocational education. 2) Local applications for Perkins funding. 3) National, state, and local economic information. 4) Information from the state departments of education on the numbers and locations of students with disabilities and those who are disadvantaged. 5) Transcript data. 6) Interviews with appropriate personnel. 7) Comparative data, including the former NAVE findings, the National Longitudinal Transition Study of Special Education, and some of the ongoing state follow-up studies (e.g., Iowa, Florida).

**Potential problems.** 1) Interstate differences in defining special populations (e.g., at-risk populations). 2) Varying service delivery systems may be difficult to compare. 3) The National Assessment study may be near conclusion before effects of the legislation are known at the grassroots level.

**Discussion**

**Major points:**

- The issue of defining "special populations" is particularly important. The definition in the new Perkins Act still leaves it open to interpretation. The NCRVE finds that different states have various labels for many of the special groups; only the most obvious ones are standardized.

- With regard to the community colleges' service to special populations, it will be necessary for the colleges to lobby to get as much of the Perkins money as possible, depending on the state formulas and decisions. The emphasis on tech-prep should help, as it requires articulation between the college and the secondary institution.

- One effect of the new legislation may be a move toward more service to special populations through mainstream education, and away from sheltered programs. The assessment might look at the results of that movement.

**L. Allen Phelps**
**The Vocational Studies Center**
**University of Wisconsin**
**Madison, Wisconsin**

***Participation in vocational education programs, including access of individuals who are members of special populations to high quality vocational education programs [Sec. 403(b)(4)].***

The structure of the new Perkins Act raises at least three significant questions that must be considered by the National Assessment.

1. To what extent does the more flexible funding strategy enhance or limit the participation of special populations? What losses or gains are realized in this new arrangement relative to funding, interagency coordination, evaluation, data collection, and program improvement?

The previous NAVE and other studies have provided some good data on access to vocational education for students with special needs, particularly students with disabilities. The National Longitudinal Transition Study, sponsored by the Office of Special Education and Rehabilitation Services in 1987, looked at 8,000 students with disabilities, in the age bracket 13-20.

A major analysis of the study's findings looked at the effects of occupationally oriented vocational education on the special needs youth in comparison with nonparticipating students. The analysis showed that the participating youth had significantly lower school absenteeism and a significantly lower probability of dropping out when demographic and disability were controlled. Independent of its effects on students' decisions to drop out, vocational training was significantly related to a higher likelihood of finding a job and participating in vocational education at the postsecondary level in the early years after high school. One major factor to be considered in relation to the implications of this study is that only 56 percent of students with disabilities were enrolled in vocational education programs during the most recent high school year.

Another general issue related to access for special education concerns the reauthorized Individuals with Disabilities Education Act. The new legislation revises the previous definition of free and appropriate public education to include transitional services, seen as an outcome-oriented process that promotes movement from school to post-school activities, including vocational training and postsecondary education. The students' IEP's must now include a statement about the transition services. Thus, this initiative looks beyond the specifics of vocational or special education to include a process that coordinates resources and programs to ensure that this special population will have a successful transition into the workplace.

In relation to the question of more flexible funding and access, and the impact of this flexibility on program improvement and other aspects of vocational education, a number of policy questions should be answered: What student outcomes can be generated with limited resources under the new Act? What happens when total funding is reduced due to removal of excess costs and matching requirements? What happens when mandated services for disabled or disadvantaged students are replaced with assurance statements and performance standards designed "to encourage the service to target populations and target groups in special populations"? How will fewer dollars affect

interagency coordination? Will we be able to sustain the commitment to serving a significant proportion of disabled and disadvantaged students in area vocational centers and through comprehensive cooperative education and work programs?

Relatively little is known about the personal value of vocational education to youth and adults with special needs. The National Assessment could consider developing a series of case studies describing the vocational education experiences of 75-150 representative students at various age levels with different kinds of disabilities and special problems. This would provide a rich data base to help Congress, administrators, and other policy-makers understand the implications of engaging these students in programs that improve their sense of self-esteem, give them a sense of purpose, and empower them to discover new avenues for learning.

2. In what ways and to what extent does the upgrading of skills in vocational education through the tech-prep and integration of academics initiatives limit program access for special groups?

The issue of upgrading vocational education programs through tech-prep and integration initiatives is critical. People in the field express apprehension that the move toward more "knowledge-intensive" programs will lead to a two-tiered system with special population students left in "regular" vocational education classes. We must be aware that as normative expectations for vocational education rise in our society, the disabled and disadvantaged clients' expectations will also rise.

In relation to this issue, the National Assessment could look at state and local implementation of the higher level programs and ask: What is the level of participation of special population students? What are the outcomes for these students? The 1990 data from the National Longitudinal Transition Study might yield some relevant data.

3. What are likely to be the effects of performance standards and measures on the equity goals of vocational-technical education?

The effects of performance standards on equity goals issue is related to up-scaling vocational education programs. It raises the issue of "creaming." If the required standards on employment and learning gains are set sufficiently high to meet industry standards, participation of special needs students might be viewed as problematic in achieving aggregate, program, or course-level outcomes. Incentives for creaming are reduced when program evaluations are based on individual trainee performance gains. However, we have noted that the short-term performance measures in the National Assessment are likely to focus on programs rather than individuals, which adds immediacy to this problem. If there is a tendency to restrict participation of special populations in mainstream programs, there could be negative effects on previous gains related to mainstreaming.

A corollary to value-added performance standards and creaming is consideration of cost-benefit measures related to not providing programs and services. A study by David Stern and some colleagues of the cost benefits of the California Peninsula Academy Program contains some pertinent data.

The issue of performance standards provides an opportunity for the vocational education community to experiment at the local level. The needs of the various special populations in the

community at the secondary and postsecondary levels can be carefully assessed and viable outcome measures identified (e.g., lowering the drop-out rate). Programs can then be designed around the special populations' needs and data can be collected on whether or not the outcomes were met. If they are not, programs will have a data base they can use to adjust the standards and services to match more appropriately the needs of special groups.

**Summary.** Data-based studies need to be developed which carefully examine: access and participation levels in light of changing Federal requirements; the efficacy of selected vocational education interventions (e.g., supervised work experience) in achieving employment and future education outcomes; and the transition process experienced by students leaving vocational-technical programs, particularly at the postsecondary level.

A series of case studies and evaluations should be undertaken that explore the involvement and outcomes for special needs students participating in tech-prep programs and other work-based learning programs.

**Paul Wechstein**
**Center for Law and Education**
**Washington, D.C.**

**Comments**

Among the activities of the Center for Law and Education is representing the full range of students served by vocational education. The equity and special population issues cannot be separated from the quality issues. Indeed, they should be defined in terms of the quality issues. The key equity issue: Are the students in vocational education in a separate, inferior education track, routed to an inferior sector of the economy? Unless this basic quality question is dealt with, all other equity issues become relatively meaningless.

In addressing the issue from an assessment and evaluation viewpoint, the local evaluation requirements of the new legislation are important. Local recipients must conduct an annual evaluation based on the standards and measures. The evaluation must include a review of programs with the full and informed participation of representatives of individuals who are members of special populations, to identify and adopt strategies to overcome any barriers that are resulting in lower rates of access or of success in programs. This is a developmental process which involves the special populations themselves. The bottom-line issue: How well are the special populations doing in terms of their participation and their success in quality programs?

When the National Assessment has determined how it will assess quality, the key starting point for looking at the special populations issues is to disaggregate the quality data. This should be done in two ways. First, by looking at outcome data, not only by program but also by special population status within it. (The problem of the kinds of outcome data available to the National Assessment by the end of the study may have implications for this.) Second, after having identified high-quality programs for which the assessment looks at a variety of structural things related to the program, disaggregate the data by student enrollment to determine if special population students are concentrated in programs with characteristics of high-quality or low-quality programs.

The two things central to the definition of quality are the academic and the occupational aspects. On the academic outcome level, quality means achieving basic and advanced skills across the full range of academic subjects. The law has three programmatic objectives related to this which reinforce each other: 1) integration of academic and vocational education, 2) sequential course of study leading to academic and occupational competencies, and 3) assessment requirements that tell whether and to what extent programs are providing advanced academic skills in a vocational setting.

The other side of the quality issue is the occupational aspect, which has not received as much attention as the academic aspect in terms of what is meant by quality. Central to quality on the occupational side are strong experience in and understanding of "all aspects of the industry." The Perkins Act includes this in the local assessment and evaluation requirements.

The importance of focusing on all "aspects of the industry" has been discussed in previous presentations. In an equity context, and in light of the question of vocational education as an "inferior" track, the idea of "all aspects of the industry" helps break down the distinction between the people in the academic track who will go to college and who will think and make decisions and the people will not go to college and who will execute those decisions. The mission of vocational education is still focused on work and industry, but the "all aspects of the industry" concept cuts across the distinction and helps vocational students understand the full context of the workplace.

The Act's definition of "general occupational skills" also speaks to this issue. These skills are not viewed as a group of work-readiness skills, but as a concrete knowledge base about a particular industry. The aim of the Act is for all students to achieve the basic set of competencies, knowledge, and skills. However, if the outcome data for special populations shows a normal curve equivalent gain for the special population students, it still does not show whether or not they are mastering the skills expected for all students.

Although the National Assessment will not be able to determine much about the impact of the new Perkins Act on student outcomes, it can look at the quality of the state and local mechanisms designed to produce outcomes, including state standards and measures. This would not be a substitute for national aggregate data. The National Assessment needs to look at the actual provisions of the law and the state and local practices so that when something fails, it can show whether the cause is a provision of the Act that did not work or the fact that people at the local level did not understand that provision when setting up the program.

Data on the disabled population need to be disaggregated in terms of degree of disability. We may find that students with mild learning disabilities are being well served but that someone with a more severe disability is being trained to be a cook, no matter what his/her own career preference might be, because only the culinary arts teacher knows how to work with that disability. Neither the interstate or intrastate formulas take account of concentrations of LEP students, which vary widely among states.

One issue is related to set-asides. It has been noted that the set-aside for people in correctional institutions is a barrier in terms of other agencies assuming responsibility for them in the mainstream programs. However, under the law, they are a special population and should be treated as other special populations are treated. Looking at this in terms of women and sex equity issues, we find that women are protected only if they are "people participating in programs designed to eliminate sex bias." Therefore, a woman who has not been offered such a program is not protected under

special populations. The National Assessment may need to look at how states are interpreting this provision.

The new Act moves away from funding fragmentation and has few statements about specific activities that must be funded. Instead, it includes a number of statements about what recipients must do as a consequence of getting the funds. This has some important implications for the assessment, as people in the field may have some difficulty understanding the new concept. The local application section states that the local recipient should describe how funds from the basic grant and from other sources will be used to meet needs such as integration of academic and vocational education and service to special populations. This will tell us something about specific ways state and local resources are used.

The Congress wants vocational education to improve the basic programs it offers, in terms of academic content, broad occupational content, and the degree to which they equitably serve special populations. They are providing federal funds for that purpose, and funds from various other federal programs are also available to help improve service to meet the needs of special populations.

The final issue is participatory planning, which the National Assessment is commissioned to evaluate. The Act calls for the state to establish effective procedures, by which parents, students, teachers, and area residents can participate in the decisions that affect them. This reflects the basic principle that when we try to improve something for a group of people, the results are much more likely to be positive if the people affected play a role in its design and implementation. That principle is axiomatic in a democratic society.

**Discussion**

**Major points:**

- The issue of access for special populations at the community college level presents a problem. For some people, such as an LEP student or an illiterate adult, access may include 2 or 3 years of preparation before beginning the actual vocational education. These students may not be counted in the vocational system. This should be considered when outcomes are being measured and as programs are designed to satisfy provisions in the new law.

- It is also important to look at the scope of support services for the diverse students coming to the community college, including women with children and adults with second- or third-grade reading ability. Vocational education depends on adult basic education to prepare students for vocational/technical training.
- The idea of participatory planning and including parents in the process seems somewhat out of place for the adult population in most community colleges. It would also present a problem for programs in correctional institutions. The National Assessment would need to visit programs to see what is actually taking place, as opposed to written descriptions of the participatory planning process.

  The language in the legislation is based on Head Start, which has always included family and community participation. This participation has worked in Head Start but has not worked very well in other federal education programs. The Perkins

legislation intends for programs to have policy councils with parents included in the actual decisionmaking. It is not clear whether or not this is meant to apply to programs at the postsecondary level.

This Act opens up the potential for more parental energy in the school. If vocational education becomes a stronger resource for meeting a range of community needs and becomes involved in community development activities such as child care and environmental issues, parents will have many new reasons for relating to the schools. Parental involvement on the decision-making level becomes a sensible vehicle for providing correct information on policy and programs and developing institutional commitment.

- When the Act talks about integration, does it mean integrating academic and vocational education throughout the schools or integrating academics into vocational education? Does the same approach apply to special populations as to other students?

It probably means full restructuring of the educational system to integrate academic and vocational education. However, much depends on reauthorization of the Higher Education Act. While vocational programs are not named in special and compensatory education legislation, there is a genuine concern about outcomes after high school and how we can ensure that the entire American high school population is better prepared to live, work, and pursue postsecondary education. When the National Assessment looks at assessing the impact of the Perkins legislation, it should keep in mind that this may be a broader change agent than we had perceived.

- Although the legislation probably is geared toward complete integration, with all students participating in both college preparatory and vocational education, it is doubtful that the Act can achieve this. The NCRVE is trying to develop networks of teachers who are committed to the concept of fully integrated education, so that even if the Perkins Act does not mandate it, there will be a number of people who want to do it and will encourage others. It may also be true that if a school tries to implement all of the Perkins legislation, it will run into practical difficulties if it tries to maintain separate tracks.

- In Michigan, over two-thirds of the high schools do not give grades for vocational courses, and on the transcript, the courses are usually listed as electives. The high schools are sending the message that vocational education is not academic education. In the community colleges, however, all of the occupational programs are considered to be academic, along with specialty, support, and general education courses, such as American Government and electives needed for the associate degree. The support courses may be the area where integration lies, as they are the general education courses directly related to the specific occupation or cluster of occupations.

- Integration happens at many levels: in a class where teachers work together and/or academic and vocational content are combined; when schools are reorganized around organizational clusters instead of in regular departments; and when courses are aligned so that there is a full vocational education program rather than electives and various

programs that are not coherent. Integration is not well defined and varies a great deal at the secondary level. Not much is known about it at the postsecondary level. Perhaps the biggest issue for assessment is that the rationale for integration at the secondary level may not apply at the postsecondary level.

The secondary-level rationale concerns such things as the specificity of vocational education in secondary programs and the need for students to have more general skills, whether they are going into the workplace or into college. The postsecondary situation is different, as many people are already focused on a career they are working toward. The available data suggest that people take general education courses related to their specific coursework, and that is the postsecondary definition of "integration."

- It is clear that Perkins funds are not going to solve all the problems for special populations, so it is important for the National Assessment to look at what the institution is doing to obtain and use funds from other programs and sources.

- The presentation on Native American education indicates that many minorities have rich and unique educational histories and values that have developed around those histories. In the black community, the question of the role of academic education *vis a vis* economic development continues to be debated. It will be interesting to see if integration where young people are taught both a core curriculum that will lead them to postsecondary education and a curriculum that will lead them to a job will elicit stronger interest in the black community than has traditional vocational education.

  It is imperative that minority group members, as well as members of special populations, participate in planning at the national and local levels. The minority group members can bring valuable insight from their unique historical perspectives about why we are seeing success or non-success in particular programs.

**Panel 6: Academic and Vocational Issues**

**Chair: Gene Bottoms, Southern Regional Education Board, State Vocational Education Consortium**

**Comments**

A survey of 500 vocational teachers in 15 states and 38 school sites shows that only 6 out of 10 teachers believes integration is important in reading, 3 of 10 in writing, and 5 of 10 in science. When asked if they do it well, the results were one of three, one of six, and one of five in reading, writing, and science respectively. With no funds in the new Perkins Act for teacher education and curriculum development, it is difficult to see how this gap can be closed.

A similar survey of academic teachers shows that, in terms of importance, 6 of 10 believe reading and math are important in integration, but only 3 of 10 science teachers believe it is important to link science to utility. When asked if they do integration well, 3 of 10 in math responded positively and only 1 of 10 in science.

**Curtis Finch**
**Virginia Polytechnic Institute and State University**
**Blacksburg, Virginia**

***Preparations and qualifications of teachers of vocational and academic curricula in vocational education programs, as well as shortages of such teachers [Sec. 403(b)(3)].***

Over the past decade, there has been a movement toward educational reform, including teacher education reform, that has had significant impact on our schools. There also has been reform in preparation of administrators. These reform movements are continuing, and teachers are dealing with different teaching content and structures and a changing environment.

A number of issues surface in regard to work being done in this area by the NCRVE and others. The overriding question is: What is the optimum mix of preparation courses and experiences? This becomes particularly important in light of articulation and integration.

The issues include

- Teacher preparation to integrate academic and vocational education.
- Teacher preparation to work with tech-prep education.
- Continuing preparation and development of practicing teachers.
- Alternate paths to the profession.
- Part-time and full-time teachers.
- Degreed and nondegreed teachers.

The issue of alternate paths into the professions is one that parallels some notions of the reform movement in general education. People come into vocational teaching positions from many areas. We cannot take the elementary education model and apply it to vocational education, as vocational education is more complex.

With regard to part-time teachers, some postsecondary institutions have 40-50 percent of teachers working part-time. The students are exposed to a great deal of course work presented by people from business and industry who have little or no teacher preparation.

In the area of degreed and nondegreed teachers, about 70 percent of the trade and industrial teachers do not have bachelor's degrees. In some states, the only thing required to teach vocational subjects in high school is 3 years of occupational experience and a GED, with no preparation program. As we move into a new phase of vocational education, with integration of academic education, it would appear that teachers should have greater facility in academic subjects than is presently required in many places. The legislation's intent is not to have auto-body teachers working in English classes. However, it is important to look at the selection criteria and preparation for teachers who will be working in integrated programs.

In the area of qualifications, many people may be prepared, but they are not qualified to teach in vocational education. Since people come to vocational education from many different fields, it is particularly important to look closely at their qualifications in terms of integration and tech-prep education. It might be important for the National Assessment to look at teachers not only as individuals but also as team members. Integration of academic and vocational education will require cooperation. There may also be an issue related to teachers with a number of years of occupational experience among their qualifications, and how that narrow focus can contribute to an integrated program.

With regard to the issue of supply and demand, there appears to be a shifting demand from secondary to postsecondary teachers, which might be a useful research issue.

**Summary of research issues.** 1) Teacher preparation and qualifications to integrate academic and vocational education and to implement and maintain tech-prep programs; 2) Teacher supply and demand; 3) Vocational teacher occupational experience; 4) Alternate paths into the vocational teaching profession.

**Data sources.** 1) A study for NCRVE entitled "The National Data Base on Vocational Teacher Education," which looks at preservice preparation of vocational teachers; 2) An Ohio State "National Survey of Vocational Teacher Education," which includes both preservice and inservice preparation; 3) An annual AACTE survey of teacher education enrollment; 4) A study completed at Virginia Tech last year for the NCRVE on content of the 4-year degree programs for prospective vocational teachers, which categorizes the courses and gives an idea of their initial readiness to work in integrated programs.

**Potential problems.** Research problems emerge from the diversity of vocational teachers and teaching. The range of teacher qualifications and school settings, the variety of professional opportunities available to teachers, and variation in state certification requirements are among the factors that make the task of gathering meaningful data difficult. The issue is further complicated by the fact that in an integrated program, even teachers of academic subjects in a sense become vocational education teachers. Given the time and money constraints, the National Assessment should consider how far it can go in including these teachers.

It is also crucial to remember that the secondary and postsecondary systems probably vary widely in terms of preparation, requirements, and certification. The assessment should look at the two systems separately and in terms of interaction around articulation.

Some of the problems can be overcome by using data gathered concurrently from teachers, administrators, and students and developing case studies, using the community as the unit of analysis.

**Comments by Panel Chair Gene Bottoms**

In defining an integrated program, it has been assumed that to be a vocational completer in an integrated program, a student should have at least three math (two should be Algebra 1 and higher) and three science courses (two should be equal to college preparatory chemistry or physics), in addition to courses in the area of vocational concentration. When 3,100 transcripts of vocational completers were analyzed, findings showed that 29 and 16 percent respectively met the math and science requirements, and 12 percent met both.

If we integrate what is now being taught, will it make any difference?

**Paul Hill**
**The RAND Corporation**
**Washington, D.C.**

***Effect of performance standards and other measures of accountability on the delivery of vocational education services [Sec. 403(b)(7)].***

A study just completed for the NCRVE has resulted in a preliminary report on accountability and the Perkins Act implications. The study is an attempt to understand the implications of the Perkins Act for state and local performance measurement and accountability. Its other goal is to suggest means of implementing Perkins requirements in order to strengthen local accountability processes, promote program improvement, and provide quality assurance for top officials such as members of Congress.

Accountability may be defined generically as the relationship between service providers and those who have the right to expect to benefit from those services. For vocational education, accountability can be seen as the relationship between employers and providers, between parents or students and providers, or the relationship between people who pay for or legislatively authorize the programs and the providers.

Preliminary conclusions of the study are subject to change. However, they show that the primary intent of the new Perkins Act was to strengthen state and local accountability, rather than to mandate data bases for national reporting. The second conclusion is that the accountability process is strong in many localities. This can be seen in employer advisory processes, tracking employer needs through student placement, attracting students via job placement success, initiating courses to fill emerging needs, and eliminating or upgrading courses with low enrollment and poor placement records.

Where the local accountability process is active and healthy and includes most of the stakeholders, the vocational program is substantively tailored to the needs of the labor market it is supposed to serve and is responsive to the desires and tastes of people at the local level. This is not inconsistent with the Perkins Act accountability requirements.

However, the accountability process is not strong everywhere. There are a number of characteristics of processes that are disconnected from the local labor market or may be serving only some part. The standards may be too low. The characteristics include "routine following" mentality among vocational education providers; spotty connections with the employer community; lax tracking of student placement; low expectations for student skill attainment and job placement; little consideration of future labor force needs; and inattention to needs of transient, low income, and minority students.

It is regrettable that the first characteristic of a weak accountability process is the stereotype for many people in Washington. They believe that vocational educators are people who are primarily interested in maintaining their jobs and making no changes. Everyone knows that local accountability processes vary widely, but many fear that the weak processes are prevalent. It is true that even processes described as strong may have a bias in that a coalition of employers who are favorable

toward the program speak to the state legislature, while the program, in fact, is neglecting the class of employers who may be able to offer good opportunities. Local processes are constrained by the local businesses' definition of where the economy is going, which might be wrong. There clearly is a role for state governments and, to some extent, the federal government to try to stimulate, improve, and monitor the quality of the local accountability process.

A focus on national data bases for accountability can weaken local accountability and may not solve the accountability problem at the national level. If the federal government believes that creating performance standards, including placement rates, will lead to healthy local processes, it will be in trouble. The states will drop their local process monitoring in favor of standard outcomes data collection. Furthermore, an upward accountability focus distracts attention from service to local students and employers. In addition, universal outcome standards lead to local "gaming" and employers' complaints cannot be answered by national averages. Common wisdom is that what is measured improves, but this is not necessarily true. At the trivial level, there may be improvement, but changes in the underlying dynamic may be negative. Creaming in vocational education is a clear example.

It is hard for many people who have no direct contact with the vocational education system and its products to determine its value or distinguish its outcomes from other kinds of education. As long as vocational education is inextricably confounded at the local level with other kinds of education, trying to show Congress data about vocational education *per se* may not be the most effective way to protect itself. It has some value, but increasing the salience of vocational education at the local level so that employers will defend it is probably much more valuable. Thus, the final study conclusion is that Perkins Act implementation should lead to direct efforts to strengthen local accountability processes.

**Recommendations to the National Assessment.** 1) Develop a national picture of local accountability processes, including a representative survey of school systems and institutions and intensive case studies of a subset. 2) Study state efforts to strengthen links between local providers, employers, and parents. 3) Characterize strong versus weak local accountability processes and strong versus weak state efforts to promote those processes. 4) Convene a conference to discuss how state and federal governments can identify strong and weak local accountability processes, what the federal government can do to help states monitor and assess local processes, and how state and federal data mandates can support rather than detract from local accountability.

**Potential problems.** This is a problem-solving project and is not based on standard methods. It is expensive and inherently controversial.

**Discussion**

**Major points:**

- Most high schools are probably unaware that they have a problem with academic and vocational integration. The local performance accountability focus described is fairly traditional. Since studies show that many vocational completers leave high school without an adequate academic foundation, what scorekeeping process should be built into the National Assessment to promote integration? How can a new context be

created in which academic and vocational teachers will come together to solve problems?

Scorekeeping is not the way to solve this problem. A study just completed at RAND looked at New York City special purpose and comprehensive public high schools, as well as Catholic schools, to see what schools work and do not work for disadvantaged students. The Catholic and special purpose high schools (those with a particular focus such as vocational education, science, or arts) were alike, and were profoundly different from comprehensive public schools.

The difference between effective and ineffective high schools for poor children is that the effective schools are integrated according to a theme. All students are taught all classes from a particular point of view. To achieve this kind of integration, the school must be built on a set of premises and all vocational and other courses pulled together on the basis of those premises. In some cases, there might be no vocational education because it might not fit. Integration is a matter of institutional reform, not measurement of outcomes.

- But the issue of helping high schools discover that they have a problem should be addressed? Is there a data base at the school building level that would help? This may be a central issue for the National Assessment.

The employers, parents, and students themselves should be telling these schools that they are not meeting the communities' needs, although the vocational completer's initial placement job will probably not provide sufficient feedback for this purpose.

In the RAND study, schools had ample evidence that they were not working for example, a school where no graduate had passed the regent's exam in 5 years and one where 50 percent of ninth graders did not graduate. In many schools, expectations are very low and there is no outside force to cause change. The question of how to get effective community pressure to make bad schools good is important, but the problem is not one of vocational education, although it may be part of the solution. If poor schools and their communities can be helped to see that they do not have to be that way, improvement can happen. Funding is also part of the issue, as increased funding can help drive change.

- One criticism of magnet schools is that they work in big cities with high concentrations of students in the sending areas, but are more difficult in other areas. However, even some rural areas are beginning to think in terms of the community's needs and dividing high schools to provide more focused education. A school in Moss Point, Mississippi, undertook an effort to provide a well-designed instructional system with clear-cut objectives. The student makeup is 60 percent black and 40 percent white. Over a period of 8 to 9 years, student-achievement levels moved from the 10th-15th to the 65th-70th percentile range.

The end of this process is a choice system, as high schools built on particular principles will mean that people will have reason to go to one rather than another. It will be hard to justify expecting students to go to a particular school when another one

is better suited to their interests and needs. It also will be hard to justify making teachers stay in a school where they are unhappy with the approach and can find one they like better.

- The issue of how students come to vocational education has not been discussed. Students enter these programs by choice or because they have been coerced in some way. However, there also may be a breakdown in the effectiveness of the guidance system in relation to vocational education. It might be that the National Assessment should look at the guidance element in relation to enrollment.

- Accountability at the postsecondary level is a problem in that students enter these institutions for a variety of reasons, and degree or certificate completion may not be necessary to their goals. Most are part-time, employed students, and take several years to reach their goals. At this level, the only thing that can be counted is completions, which do not give much information on accountability in terms of program outcomes.

  In postsecondary vocational education, it is difficult to know why people are there and, consequently, it is hard to justify the public expenditure. At the community college level in Maryland, enrolling students are asked what their goals are, and completers are asked whether they completed their goals or if the goals changed during their time in the college. A problem may arise with grant recipients who must be working toward a degree or certificate and who may report false goals.

- In Texas, effort is being made to give academic or general education credit for some of the applied technology courses being given in secondary and postsecondary institutions. However, teacher preparation has been a barrier, particularly at the secondary level.

  This is an important aspect of the linkage between secondary and postsecondary institutions. Teacher preparation at the two levels varies to such a great extent that it is amazing when they can develop and implement an articulation agreement between the two programs. This issue might be one for the National Assessment to consider.

- When we talk about integration, it is important to understand that vocational education students often identify with the vocational teachers because of the teachers' occupational experience, while they see academic teachers merely as such. This has implications for teacher preparation and experience, in that this type of identification and bonding helps attract and keep vocational students. One of the values of an apprenticeship program is the element of joining and becoming part of an occupational community.

- If large numbers of vocational teachers say they do not know how to integrate or reinforce subjects such as math and science, how can this gap be bridged in teacher preparation? How can academic teachers learn to apply their subjects in a variety of contexts? Also, how can we address the problem of vocational education students who are not encouraged to read or do homework which requires reading? Reading on

the job is different from reading to acquire knowledge for later use. What questions can the National Assessment ask about these issues?

This is a practical issue, as it points to the fact that teachers may not be prepared or want to work together toward a common goal. At the school level, leadership and vision can help bring teachers together. Even if teachers receive inservice training to help them develop the required skills and attitudes, unless the institution has leadership committed to effecting positive change and a reward system that supports change and creativity, no major change will occur.

- In some school systems, vocational education is still a "dumping ground." Across the educational spectrum, a great deal of money has been directed toward economically disadvantaged and disabled students, as it should be. Money has also been directed toward higher-achieving students through advanced placement and other programs. What will the Perkins Act do for those students in the middle, the average students? The Russell Corporation employs many students from this group when they leave high school but has not been able to get the school system's cooperation in eliminating barriers that would allow average students to be in the vocational track.

**Cathy Stasz**
**The RAND Corporation**
**Santa Monica, California**

***Extent and success of integration of academic and vocational curricula [Sec. 403(b)(10)].***

This presentation is based on several research studies being done for the NCRVE, including a current one by the RAND Corporation which looks at how federal, state, and local policies affect implementation of integration policies. The question is whether these policies enable local districts to carry out the programs they envision or create barriers to that implementation.

Integration is a complicated subject and is important to a number of groups. Vocational educators are interested in integration because they believe it is a way to respond to criticisms about the narrow focus of vocational education and the lack of academic education the vocational students receive. Employers are interested because schools are not producing the workers they want, either academically or vocationally. Educators and parents are concerned because, in addition to having poor reading skills, students do not have the math skills to figure out how many video cassettes they can rent with $10.00. And cognitive science researchers, in their efforts to understand how students learn and how knowledge can best be imparted to them, strongly believe that lessons can be learned from vocational education.

Vocational educators have used apprenticeship models for a long time, including modeling and tutoring as part of their regular teaching practices. Cognitive scientists believe that these and other aspects of the hands-on approach used in vocational education could be used in the academic classroom to improve students' understanding of math and science.

When a concept receives attention from so many groups, there is a great deal of variation in the kinds of reforms used to implement the concept. With multiple needs and expectations for integration, the questions become: What is the purpose of integration? Should we do pervasive skills

teaching? Are we interested in improving higher-order thinking skills? Who is the integration for—vocational students and teachers? All students?

There are multiple models of integration. Some are specifically aimed at changing intracourse requirements; that is, increasing academic teaching for vocational students. In better models, an attempt is made between academic and vocational teachers to work together on courses. There are also models where schools are being entirely restructured and the old vocational/academic departmentalization has broken down. The schools are organized around occupational clusters and the two groups of teachers work together all the time. Classes are blocked so that students can work in their vocational area for 3 hours and take their academic courses in shorter blocks. Some of these schools have moved toward more student choice and less tracking as students cycle through various vocational areas in their freshman and sophomore years and make choices about the occupational clusters they will focus on.

Although this variation has meant that we have yet to develop a firm definition of integration, we have identified three elements of the ambitious models of integration. The first element is the vertical alignment across courses. In horizontal alignment, academic and vocational teachers collaborate, while in vertical alignment, there is a relationship among the courses students take as they move through school. In tech-prep, students' courses are related within an occupational cluster across the secondary-postsecondary span.

The second element in the ambitious models is changes in pedagogy. This includes team teaching, use of the hands-on approach, and an applied academics curriculum designed to have more hands-on work in academic areas for vocational and general track students. The third element is organizational change, with clusters, magnet schools, and school-within-a-school arrangements. These present a vision of what school might be for all students, and might be the kinds of things the new legislation hopes to encourage in terms of restructuring.

In looking at secondary school issues, state and local policies are considered separately, as they are different. Even in states with a clear mandate and guidelines for integration, implementation in the local districts and schools will vary widely. There are some existing baseline data in the NCRVE research on state policies governing integration. Most states are not looking at the more ambitious models at this point, but with the advent of the new Perkins legislation, it will be interesting to see how the state plans address integration issues.

Integration does not take place in a vacuum and, in both localities and states, there are countervailing policies that can prevent development of certain kinds of innovations. For example, California's graduation requirements have resulted in an across-the-board reduction in vocational education classes, which are primarily elective in comprehensive schools. Vocational educators have had to rethink their classes and recast them to serve the graduation requirements.

**Research issues (secondary level).** A state survey should be done to determine current policies and methods of interpreting the legislation. About 30 districts could be selected, in either a random sample or a purposeful sample which would target possible exemplary models, with both comprehensive high schools and vocational/technical schools. In 4-day visits, information would be gathered from teachers, students, and community residents to answer such questions as: What is integration in this district? What does it mean? What is it trying to achieve? What model or models are people putting together to try to reach the goals they have set for integration? What are their

plans if they are just getting started and have not done this before? If they have been doing it for a while, what problems have they had and how are they trying to cope with those problems? What kind of changes is integration going to mean? Is this a reform that will affect both academic and vocational students? Is it going to bring teachers closer together in collaboration? Is it going to change guidance and counseling? (It is agreed that a knowledge gap exists in regard to this last item.)

The accountability questions should include: What evidence will indicate that the goals have been reached? What means is the local school or district going to use to see if it has reached its goals? Will they develop tests? Will they look at completion rates? What will be indicators of success? How articulated are those indicators?

At the postsecondary level, there is a small amount of data. It shows that few states have policies for integration at this level. A state survey should be done to determine current policies and interpretations of the legislation. One survey by Norton Grubb received about 150 responses from community colleges and technical institutes indicating that the most prevalent form of integration is requiring vocational students to take general education courses. A few schools are trying to develop applied academic curricula or new interdisciplinary courses across academic and vocational lines.

**Research issues (postsecondary level).** A survey should be done of a random sample of states with a high percentage of Perkins funds going to postsecondary institutions. Within those states, locations with a mixture of community colleges, vocational/technical schools, and technical institutes should be selected. Instead of an in-depth case study, a telephone survey could be used to gather information. Because there is less integration taking place at the postsecondary level, a more broad-brush approach could be taken. Programs identified as having an interesting integration initiative could receive site visits and be asked basically the same questions as the secondary institutions. One question of particular importance is, what is the rationale for integration at the postsecondary level?

**Overall research issues and problems.** If we are not going to have hard student outcomes 2 years out, are there some interim indicators that could point to the value of integration? For example, if general track students are now taking applied academics and courses they used to take have been eliminated, this could be considered a good interim outcome. We will not do a controlled experiment to see whether students are learning more than they did in the old courses, but if the educators believe these courses and this approach is better and have eliminated the old way, this itself is evidence of an integrated approach.

Even if we could do outcome studies within the time frame, there are technical problems in evaluating the consequences of integration. With a variety of reforms ranging from school restructuring to small changes in courses, who are the comparison groups? What are the comparable measures on student outcomes with such a variety of efforts? Integration is in a developmental stage, and it will take a number of years for the successful models to surface, so it is important not to make premature judgements.

It may be possible for the National Assessment to do some focused evaluations. Ohio has developed its own applied academics curricula, and some schools are using it. Some are more successful than others. It might be very useful to look at some of the comparisons that are naturally occurring. It also would be interesting to do an independent evaluation of the popular applied

academics curriculum many schools are using. Given the constraints of time and resources, it may be the one many schools will ultimately adopt to initiate integration.

It might also be possible to do a longitudinal study of long-term integration programs that have had graduates—for example, Benson Polytechnic in Oregon—which has occupational clusters and close communication with the employment community. This and others like it who have recent graduates could provide the basis for a longitudinal study that would be in place if the Congress should decide to authorize such a study. These programs could also provide information on the school-to-work transition and secondary/postsecondary articulation.

We need to develop a clear vision about what integration can be. We need to identify and describe models that schools can emulate and what teachers and administrators need to do to implement those models within their local districts. The vocational community can make a major contribution by clarifying that vision. The long-term questions for the National Assessment and other research projects are: Is integration a good idea? For whom? Does it fulfil the promise it appears to offer? Will it eliminate the general track and thus improve education for a large number of students?

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***Effect of educational reform on vocational education [Sec.403(b)(5)(A)].***

Virginia Tech is conducting a longitudinal study, funded in part by the NCRVE, to explore or map statewide trends in vocational participation *vis-a-vis* education reform. The original emphasis was on high school graduation requirements, which quickly evolved into a broader picture of reform. For example, while graduation requirements in some states increased, other states made the existing number of requirements more prescriptive. In other states, in addition to the high school graduation requirements, postsecondary entrance requirements at 2- and 4-year levels were changed, which had an impact on high school students' course choices. In many cases, this precluded their electing vocational education courses.

State secondary school accreditation standards were another reform area impacting vocational education in terms of changes in the standards and scope of in-school programs and access to programs, both in and outside the school. In some cases, vocational education appeared to benefit by a shift from access to programs only in vocational centers to access to certain vocational programs within the school. In other cases, standards increased the number of required programs in the schools, and vocational education was eliminated.

Teacher certification is also a factor. Implementation of new certification requirements in some states has affected vocational staffing ability, and in some cases, the result is lost courses. Equitable funding formulas, while not specifically a reform effort, are having an impact. In poor school districts where refunding has been instituted, resources often are obtained for academic instruction rather than for vocational education. Parental choice also affects vocational education in that schools must market themselves and must determine how and where vocational education fits in.

A recent study conducted for the Education Commission of the States reviewed reform legislation in all 50 states. It identifies some issues in implementation of educational reform policies

that have implications for vocational education if it should attempt to initiate its own reform strategies:

- The lack of a clear, coordinated vision for reform within states, resulting in inconsistent support and lack of direction.

- A schizophrenic approach to implementation, resulting in reform activities which are more complicated and competitive than they are effective and are difficult to assess in terms of student outcomes.

The issue of leadership is related to the lack of vision, and the lack of coordination among reforms sends inconsistent messages to school leaders. There also is a lack of people who know how to lead in reform settings. It is hard to see how vocational education could have a positive impact in this environment, particularly since it is often seen as being outside the general education reform arena.

There are a number of complications related to vocational education's ability to meet the demand for reform. For example, technology education tends to straddle the fence between vocational and academic education. In many cases, a program that has been classified as industrial arts may change to technology education. Another complication is the division of vocational education into a number of various program service areas, which have varying degrees of acceptability in terms of being received as alternatives for academic credit in the schools. Leadership in vocational education has been receiving increased attention in research efforts. The question is: What is the capacity for vocational education to participate in the leadership of education reform generally, and in vocational education's own reform efforts?

Recent research indicates three themes related to vocational education reform to serve all students: 1) Providing more context for learning academic subjects than currently exists. 2) Providing more opportunities to use knowledge for practical purposes. 3) Providing students a broader range of personal, intellectual, and work-related skills than could be provided in traditional classroom settings. However, if vocational education is also to continue to provide occupational skills to students entering the workforce and to serve the needs of special populations, it has a broad range of tasks to consider.

The issue of delivery of vocational education through postsecondary institutions is another level of complication. Although articulation and coordination of secondary and postsecondary programs appears to be a critical factor in vocational education reform, in many cases there is little coordination and cooperation between them.

In looking at the impact of reform on vocational education, the Virginia Tech study of longitudinal enrollment patterns in vocational education divided states into eight trend categories, four showing increasing participation rates and four showing decreasing rates. In well over half the states, reforms related to graduation requirements were cited as the one factor with the most negative impact on vocational education participation.

States with positive enrollment rates evidenced the following activities: implementation of "2+2", advanced credit, and articulated programs; introduction of exploratory cluster orientation or career programs into the middle schools; changes in accreditation standards which required vocational

access in schools or area centers; and restructuring vocational education programs and implementing more flexible scheduling patterns. And a final factor, particularly important in light of the Perkins legislation, was the ability to integrate vocational and academic curricula.

States in the negative enrollment rate groups cited some specific factors contributing to the decrease in vocational participation; where factors cited by the positive groups existed, they were not strong. The negative factors cited were emphasis on academics, graduation requirements, and accreditation standards to the extent that vocational education was ignored or greatly reduced; continued delivery of traditional vocational education, including travel time to centers; increased postsecondary entrance requirements; funding caps on personnel or units of vocational instruction; lack of coordination with postsecondary institutions and exploratory programs in middle schools; lack of integrated curriculum and program innovations; and the image of vocational education.

From the researcher's viewpoint, it is important to note that decline in area high school population or the local economy would also contribute to declining vocational enrollment rates.

**Research issues.** The data from the studies cited and various state studies of reform efforts provide a data base for looking at the effects of reform on vocational education. NELS 88 and High School and Beyond data may also provide some insight into student participation and program success. Although most of us appear to be leaning toward qualitative assessment and research, we are aware than it is more time consuming than quantitative analyses. Focus groups among state leaders within like categories of experience related to reform would be fruitful sources of data, particularly regarding identification of models.

It will also be important for the National Assessment to look as closely at what does not work as at what does. Given the complicated and often uncoordinated framework of education reform, we may need to ferret out ineffective strategies before progress can be made with the more effective approaches.

**Discussion**

**Major points:**

- If case studies on integration are done as recommended by Cathy Stasz, it would be useful to look at whether or not vocational education students are taught a different academic content than college preparatory students, and by different teachers. This should also include how expectations for vocational students differ from those for other students for example, in the area of homework. However, given the National Assessment's resources, it probably is not feasible to do the intensive studies that would yield information on teaching practices. It might be possible to get information on expectations directly from students, teachers, and administrators. Classroom observation can be useful if it is targeted and the researcher has a hypothesis about what she or he wants to look at.

  The RAND research suggests that the only thing that makes a difference in education is exposing young people to different, higher-level content. If the mentality is that vocational students cannot do much and the focus of integration is limited to

elementary skills that lead to entry-level jobs, it will not show a difference. Expectations for vocational education students are an important variable.

- In relation to the notion of postsecondary integration as simply the presence of general education courses in a community college vocational curriculum, this can be attributed, in part, to educational reform at the college level. State and accrediting agencies are beginning to require these courses across the board. In the move toward interdisciplinary courses, applied academic courses tend to be eliminated since they cannot be counted toward the general education core.

  In the postsecondary arena, it is important for the institution to think about what makes sense for it rather than to try to fit into one of the 8 to 12 existing models. The institution needs to make a real effort to understand where integration will make a difference for the students in that particular place. With the legislation's emphasis on tech-prep as the focus for program improvement, the postsecondary community will probably begin to articulate its own vision of integration.

- There is some concern that people might get the idea that all models are equal. It would be useful to recognize the need to deal with individual differences and perspectives in different places while also developing the idea of a continuum. The continuum would convey the message that remediation and teaching students how to measure so they can take a drafting course is not only a different model of integration, but also is a much less thorough model than many others. Perhaps a continuum could be created in terms of degrees of vertical and horizontal integration and other factors.

  Part of the problem is that mixing various weak program components will not bring about positive effects but could result in further "dumbing down" if academic teachers get the idea that vocational students cannot do certain things.

  The other side of the issue of developing a continuum is that it might appear to be saying that a particular model exemplifies integration. It is too early in the developmental process to say that.

  With regard to classroom observations, there may be some value in asking teachers the most important thing they want students to learn and asking students the most important thing they learned. There could be some great discrepancies across tracks. Looking at teacher-based, school-based, or state-mandated exams might also give us an idea of what the school is trying to teach based on what it is measuring and rewarding in the exams.

  There is a barrier to some integration and "all aspects of the industry" in certain forms of competency-based vocational education. The competency-based concepts are excellent, but when they are translated into a large number of specific tasks, they may shut out serious integration efforts.

- It is interesting to note that postsecondary health programs tend to be different from others and are more integrative in their approach. It might be useful for the National

Assessment to look at the health programs and to measure completion rates against those of other programs.

- Every state publishes data on enrollment by specialty, and every state employment service publishes occupational and employment data and employment projections. If funding is a key point of leverage, would it be going too far if state directors tell the people in their states that unless their enrollments have some relationship to occupational projections in the state, or even to occupational employment, funding will be withheld? If this became part of the accountability process, the question of coercion and free choice would come into play.

  This approach could be one way a state education agency could perform a check on the health of the local accountability process. It might not go so far as to look for a mechanistic connection between the data and punishment, but it could be the basis for a dialogue. If the local educators can make the defense that they have a different enrollment profile than the state wants because they have a different profile of the local labor market, they should not be punished. But if it becomes clear that they are not paying attention to the local labor market, the state should intervene. It should make an immediate effort to ensure that the locality understands and responds to the labor market. This process is used in Utah, where programs are not implemented or continued unless they have a direct tie to the local labor market. The state includes some programs that are closely tied to market areas where training was needed but students did not enroll in the program.

**Final Discussion and Comments**

**Major points:**

- It would enrich our discussions and perhaps move our efforts forward, if some representatives of the various academic areas were included. This ties in with the idea of looking at vocational education in a broader context, which has received heavy emphasis in this conference. It also is important to look at academics for research reasons, as we need to do comparison and control of all kinds.

- Statements have been made about giving vocational students instruction in math, science, and communication, including advanced courses in the first two subjects. Much of the debate here seems to be built on the assumption that we know what should be taught on the academic and vocational sides, but our assumptions might not be valid. One piece of the equation that is missing is information from the business community on what they believe should be taught.

  We might find some dramatic differences if we ask the business community the question. For example, the content of high school Algebra I is driven by the needs of surveyors' aides when the Northwest Territory was settled. It has not changed since then. If we ask, we will probably find an answer very different from "Algebra I" in terms of business and industry needs related to math literacy.

Most of the business people included in this conference do not represent the smaller businesses that employ most of the vocational education graduates. The assessment will need to identify a representative sample of those employers who are most directly related to the vocational system, both to bring them into the debate and to obtain their input for the evaluation.

- The legislation states that vocational student organizations are to be assessed on the degree to which minority students have been involved in the organizations. How will that assessment be done?

  This does not pose an assessment problem, in that when the relevant student organizations are identified, lists of members can be surveyed for information on demographic, racial, and other background characteristics.

Following a summary by David Boesel of major research questions and issues emerging from the conference, presented as the foreword to this report, the meeting was concluded by Milton Goldberg, Director, Office of Research, OERI. He noted that the National Assessment has considerable importance, not only for vocational education, but also for the broader field of American education. He expressed appreciation to the participants for their comments and suggestions, and asked that they continue to keep the Office of Research and David Boesel apprised of their own and their constituents' concerns.

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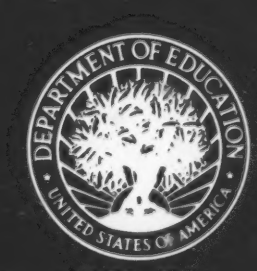


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